Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Expanding the Economic and Innovation	)	Docket No. 12-268
Opportunities of Spectrum Through	)	
Incentive Auctions	)	

COMMENTS OF UNITED STATES CELLULAR CORPORATION

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January 25, 2013

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EXECUTIVE SUMMARY

USCC urges the Commission to take full advantage of the unique opportunity presented to it by Congress' grant of incentive auction authority, while also ensuring that the level of competition in the wireless industry does not continue its downward trend. The Commission should start by taking steps to maximize the amount of spectrum made available through the reverse auction and repacking process. For instance, the Commission should not withhold additional spectrum from smaller and rural markets simply because a lesser amount can be cleared in the large, urban markets. Broadband access is most lacking in small and rural markets, and the propagation characteristics of the 600 MHz band are ideally suited to serve these areas. The Commission also should pursue every reasonable opportunity to increase the amount of spectrum made available in all markets. For instance, it should offer a large variety of options for broadcasters to participate in the reverse auction, set a high reserve price, or maximum payment, for participating broadcasters, and make reverse auction participation as simple and painless as possible for broadcasters. Without sufficient additional spectrum, wireless carriers cannot deploy robust broadband networks, and without this infrastructure the nation's skyrocketing demand for wireless broadband services cannot be met and the vast opportunities presented by universal broadband access cannot be attained.

USCC also urges the Commission to establish a mix of small geographic license areas for the 600 MHz band in order to promote competition and ensure the deployment of rural networks. Specifically, the Commission should offer licenses in the forward auction on the basis of both Economic Areas ("EAs") and Cellular Market Areas ("CMAs"). Offering a mix of geographic license areas would provide the opportunity for all to participate in the forward auction, but only by including CMA-based licenses can the Commission preserve opportunities for small and

regional carriers, as well as new entrants, to provide an important source of competition, variety, and diversity in rural and less densely populated areas. At the same time, all carriers would benefit because the use of CMAs would allow more targeted spectrum acquisitions, while not discriminating in favor of any single business plan. In contrast, nationwide or super regional license areas would significantly disadvantage small and regional carriers, as well as consumers in small and rural markets, to the benefit of the already dominant national carriers.

USCC further urges the Commission to conduct the reverse auction first to promote the availability of frequency-specific, rather than generic, licenses in the forward auction. Auctioning generic licenses would be a novel and untested approach, while frequency-specific licenses would provide all potential bidders with the certainty required for business planning and auction preparation purposes. The use of generic licenses also would require an additional auction stage that would discriminate against smaller carriers because the vast financial resources and spectrum holdings of the national carriers would permit them to win the most valuable licenses in each market area. In turn, smaller bidders, already bound as forward auction winners, would be forced to accept the "leftover" licenses not desired by the national carriers even though these licenses might be wholly unsuitable for the smaller bidders' business plans and market deployment needs.

The Commission also should adopt interoperability requirements for the 600 MHz band. Otherwise, it would risk a situation like that in the Lower 700 MHz band, which has stranded investment and drastically delayed the deployment of advanced mobile broadband services to many rural and underserved areas. Another action necessary to ensure competition is for the Commission to adopt an auction-specific spectrum aggregation limit. Specifically, no 600 MHz auction applicant should be allowed to acquire more than 25 percent of the spectrum made

available for auction in any licensed area. And, if the Commission unwisely declines to adopt an interoperability requirement, and assuming sufficient spectrum is repurposed so that "extended families" of band plans are necessary, this 25 percent spectrum aggregation limit should apply individually to both the amount of downlink spectrum made available in the smaller family and the amount of additional downlink spectrum made available in the larger family.

USCC also urges the Commission to adopt a license term sufficiently long to address the unique characteristics of the 600 MHz band and the incentive auction process. As the Commission has done in the past, it should recognize that spectrum occupied by incumbent services for an indefinite period of time requires an initial license term longer than ten years from license grant. USCC therefore urges the Commission to adopt an initial license term of fifteen years, as it did for the AWS-1 band, or, at a minimum, extend the license term for a period not less than ten years after the 600 MHz band has been cleared of broadcast operations, similar to its approach for the 700 MHz band. A longer license term would be particularly appropriate here because the 600 MHz band is uniquely suited to provide service to rural areas, which often are built out by licensees lacking substantial financial resources and existing infrastructure. The Commission also should refrain from imposing additional license renewal standards, which would generate enormous and unnecessary new paperwork burdens and create investment-killing uncertainty concerning the security of licenses.

Further, in order to provide 600 MHz licensees sufficient flexibility in how they deploy their networks, the Commission should follow its long-held reasoning and once again rely upon its "substantial service" standard. Inflexible build-out requirements are unnecessary, arbitrary, and ignore market realities. They force carriers to build networks according to a government-imposed timetable rather than market demands, and they particularly disadvantage small and

rural carriers. However, if the Commission nevertheless decides to prescribe uniform construction obligations, it should adopt a reasonable population-based, rather than geography-based, end-of-term benchmark, and must avoid imposing unnecessary and draconian penalties for a licensee's failure to meet a build-out requirement.

USCC also strongly opposes any use of combinatorial, or "package," bidding for any portion of the 600 MHz licenses offered in the forward auction because of the bias, complexity, and minimal real world experience related to this approach. Package bidding would further complicate an already monumental undertaking and put small and regional carriers at a significant disadvantage without providing any substantial public interest benefits. USCC also urges the Commission to take all reasonable steps possible to quickly clear the 600 MHz band of interference from broadcasters, and thereby free up this spectrum to new and innovative wireless broadband services. Finally, the Commission should take immediate action to facilitate the voluntary relocation or relinquishment of Channel 51 broadcast operations in advance of the incentive auction. Lower 700 MHz licensees have already been substantially hampered by these continuing operations for far too long, and should not be forced to wait years longer if they can enter into mutually beneficial arrangements with willing Channel 51 broadcasters.

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United States Cellular Corporation ("USCC") submits these comments in response to the Notice of Proposed Rulemaking ("NPRM") released October 2, 2012 in the above-captioned proceeding.[1] Through the NPRM, the Commission formally launched this historic incentive auction rulemaking proceeding, as first proposed nearly three years ago in *The National Broadband Plan*[2] and made possible last year by Congress' enactment of the Middle Class Tax Relief and Job Creation Act of 2012 ("Spectrum Act").[3] This type of innovative approach is necessary to address our nation's skyrocketing spectrum demands, and meeting those spectrum needs "is essential to continuing U.S. leadership in technological innovation, growing our economy, and maintaining our global competitiveness."[4]

In carefully considering how to best implement this undeniably complex process, USCC supports Commission efforts to maximize the amount of spectrum made available for wireless broadband services. At the same time, however, the Commission must remain cognizant that competition in the wireless industry has continued to decrease in recent years to the detriment of consumers. A lack of competition decreases innovation and investment, leaving consumers with

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[1] *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Notice of Proposed Rulemaking, 27 FCC Rcd 12357 (2012).
[2] *See* FCC, *Connecting America: The National Broadband Plan* (Mar. 2010) ("*National Broadband Plan*").
[3] Pub. L. No. 112-96, 125 Stat. 156 (2012).
[4] NPRM, 27 FCC Rcd at 12358.

fewer, if any, service options at higher prices. USCC believes that its proposals, as set forth below, would assist the Commission in both maximizing the amount of spectrum that can be made available for wireless broadband services and help to address the growing competitive imbalance found in today's marketplace.

I. THE COMMISSION SHOULD MAXIMIZE THE AMOUNT OF SPECTRUM MADE AVAILABLE THROUGH THE REVERSE AUCTION AND REPACKING PROCESS.

Because the Spectrum Act permits only one reverse auction and one reorganization of the broadcast television spectrum,[5] the Commission must use this lone opportunity to repurpose as much spectrum as possible. USCC notes that a central goal of the Commission in this proceeding is "to repurpose the maximum amount of UHF band spectrum for flexible licensed and unlicensed use in order to unleash investment and innovation, benefit consumers, drive economic growth, and enhance our global competitiveness," and that Congress similarly expressed its desire for the Commission to maximize the amount of cleared spectrum.[6]

A. Our Nation Requires a Substantial Amount of Additional Spectrum Suitable for Wireless Broadband Services.

When the Commission first proposed incentive auctions to free up additional spectrum for wireless broadband services, it noted the substantial benefits that ubiquitous broadband service has for our nation:

> [B]roadband is a foundation for economic growth, job creation, global competitiveness and a better way of life. It is enabling entire new industries and unlocking vast new possibilities for existing ones. It is changing how we educate children, deliver health care, manage energy, ensure public safety, engage government, and access, organize and disseminate knowledge.[7]

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[5] *See* Spectrum Act §6403(e).

[6] *See, e.g., Keeping the New Broadband Spectrum Law on Track*, Hearing Before the House Subcommittee on Communications and Technology (Dec. 12, 2012) (prepared statement of Rep. Upton) ("[T]he FCC should focus on maximizing the spectrum it clears…").

[7] *National Broadband Plan*, p. xi; *see Joint Statement on Broadband*, 25 FCC Rcd 3420, 3421 (2010) ("Ubiquitous and affordable broadband can unlock vast new opportunities for Americans, in communities large and small…"); *Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17667-

Because of the vast opportunities presented by broadband access, it is essential that "[a]ll Americans in all parts of the nation, including those in rural, insular, and high-cost areas, [] have access to affordable modern communication networks capable of supporting the necessary applications that empower them to learn, work, create, and innovate."[8] However, absent broadband network deployments, large portions of the American public will continue to be deprived of these opportunities. But robust broadband networks cannot be deployed without new spectrum resources because "making sufficient spectrum available to meet growing spectrum needs is integral to enabling network expansion and technology upgrades by providers."[9] As recent history demonstrates, demand for broadband services will continue to increase exponentially as new and innovative products and services continue to be introduced, which will make adequate spectrum increasingly important over time.[10]

The availability of large amounts of spectrum also is crucial for promoting competition, and with competition comes increased investment and innovation.[11] Unfortunately, the wireless market currently lacks healthy competition, and the level of competition has continued to decrease in recent years. In its latest wireless competition report, the Commission noted that from 2003 to mid-2010, the average Herfindahl-Hirschman Index ("HHI") – a commonly used

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68 (2011) ("*Connect America Fund R&O*") ("Broadband-enabled jobs are critical to our nation's economic recovery and long-term economic health, particularly in small towns, rural and insular areas, and Tribal lands.").

[8] *Connect America Fund R&O*, 26 FCC Rcd at 17681; *see id.* at 17684 ("The principle that all Americans should have access to communications services has been at the core of the Commission's mandate since its founding.").

[9] *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Fifteenth Report, 26 FCC Rcd 9664, 9821 (2011) ("*Fifteenth Competition Report*").

[10] *See id.* at 9682 ("As mobile wireless data usage grows, spectrum becomes an increasingly important input for mobile broadband networks…").

[11] *See id.* at 9820 ("Ensuring that sufficient spectrum is available for incumbent licensees, as well as for entities that need spectrum to enter the market, is critical for promoting competition, investment, and innovation."); *Joint Statement on Broadband*, 25 FCC Rcd at 3420 ("Continuous private sector investment in wired and wireless networks and technologies, and competition among providers, are critical to ensure vitality and innovation in the broadband ecosystem and to encourage new products and services that benefit American consumers and businesses of every size.").

measure of industry concentration – increased from 2151 to 2848.[12] A market with an HHI greater than 2500 is classified as "highly concentrated,"[13] which "raise[s] concerns that firms may be able to exercise market power, *i.e.*, without competitors or potential entry, there may not be sufficient constraints to prevent the exercise of market power."[14] Because market power allows firms to raise their rates, ensuring adequate competition in the wireless market would increase broadband adoption. For instance, "[w]hen prompted for the main reason they do not have broadband, 36% of [broadband] non-adopters cite cost."[15] But competition will not increase without sufficient amounts of additional spectrum being made available.

B. The Commission Should Not Cap the Total Amount of Repurposed Spectrum Based on the Amount of Spectrum That Becomes Available in Large, Urban Markets.

As the attached map demonstrates, a significant amount of spectrum can be made available in many markets simply by repacking the existing broadcast television stations.[16] In contrast, many of the largest markets are highly congested, meaning that only a minimal amount of spectrum will be able to be repurposed in these markets absent high broadcaster participation in the reverse auction.[17] The Commission therefore must avoid establishing an auction and repacking framework that could lead to these large markets significantly restricting the amount of spectrum made available in other markets.

This is particularly true because, as shown in the attached map, a substantial amount of spectrum currently allocated for broadcast television remains unused in most, if not all, small and

[12] *See Fifteenth Competition Report*, 26 FCC Rcd at 9679.
[13] *See id.*
[14] *Id.* at 9690.
[15] *National Broadband Plan*, p. 168.
[16] *See* Attachment A, p. 1.
[17] *See id.*

rural markets, precisely where wireless broadband services are most lacking.[18] Rural area residents too often lack broadband access, while some who have access are without a choice of service providers and service plans.[19] For example, "[w]hile 82 percent of the total U.S. population lives in census blocks with coverage by three or more mobile broadband providers, this is true for only 38 percent of the rural population."[20] This lack of mobile broadband infrastructure and competition is particularly harmful because, in contrast to those living in more densely-populated areas, rural populations often can obtain broadband access only through wireless services; wired services often are prohibitively expensive to provision, and therefore non-existent. This expense related to wiring rural areas further supports maximizing the amount of spectrum made available in rural markets because portions of this spectrum could be used to provide fixed wireless services to homes, schools, businesses, etc. rather than forcing them to subscribe to mobile services or completely forgo broadband access. Only by making more spectrum available can the Commission promote the deployment of both mobile and fixed broadband services "to rural and hard-to-serve areas where transmission by cable or wire may be prohibitively expensive."[21]

Maximizing the amount of 600 MHz spectrum available in rural markets also is crucial because of the excellent propagation characteristics of this spectrum.[22] Like the adjacent 700 MHz band, "[t]he unique propagation characteristics of this spectrum means that fewer towers

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[18] *See National Broadband Plan*, p. 136 ("[The] broadband availability gap is greatest in areas with low population density.").
[19] *See Fifteenth Competition Report*, 26 FCC Rcd at 9881 ("3.8 million people in rural areas have no mobile broadband access.").
[20] *Id.*
[21] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Second Report and Order, 22 FCC Rcd 15289, 15384 (2007) ("*700 MHz Second R&O*").
[22] *See National Broadband Plan*, p. 88 ("The spectrum occupied by broadcast television stations has excellent propagation characteristics that make it well-suited to the provision of mobile broadband services, in both urban and rural areas."); *Fifteenth Competition Report*, 26 FCC Rcd at 9885 ("Spectrum below 1 GHz can be crucial for the deployment of mobile wireless service in rural areas because its propagation characteristics allow providers to cover a relatively large geographic area with a relatively small number of cell sites.").

will be needed to serve a given license area, as compared to providing service at higher frequencies, and thus large license areas may be served at lower infrastructure costs."[23] As a result, it will be possible for a licensee of this spectrum to offer broadband services in rural areas that could not be served economically using higher-frequency spectrum bands. At the same time, carriers seeking to serve urban areas would not be disadvantaged by having to instead rely on higher-frequency spectrum bands because "there currently is significantly more spectrum above 1 GHz that is potentially available for use."[24] Moreover, "higher-frequency spectrum may be just as effective, or more effective, for providing significant capacity, or increasing capacity, within smaller geographic areas."[25] In fact, "higher-frequency spectrum can be ideally suited for providing high capacity where it is needed, such as in high-traffic urban areas."[26]

C. The Commission Can and Should Take Various Steps to Maximize the Amount of Repurposed Spectrum.

USCC urges the Commission to pursue every reasonable opportunity to maximize the amount of spectrum that will be made available for wireless use while still preserving a healthy, diverse broadcast television service. For instance, the Commission should offer a large variety of options for broadcasters to participate in the reverse auction. In addition to the three bid options mandated by the Spectrum Act, the Commission should also allow UHF to VHF bidders to limit their bids to a high VHF channel.[27] This could increase reverse auction participation because, as many broadcasters unfortunately learned during the DTV transition, the propagation characteristics of DTV signals worsen as the operating channel moves lower in the VHF band.

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[23] *700 MHz Second R&O*, 22 FCC Rcd at 15348.
[24] *Fifteenth Competition Report*, 26 FCC Rcd at 9836.
[25] *Id.*; *see id.* ("For instance, AT&T has noted that it cannot be assumed that lower frequency bands will require fewer cells or be more economical to deploy because other factors also affect propagation – including the presence of large buildings in urban areas or other physical impediments.").
[26] *Id.* at 9837; *see id.* at 9836 ("In addition, capacity enhancement technologies such as multiple-input and multiple-output (MIMO) may perform better at higher frequencies.").
[27] *See* NPRM, 27 FCC Rcd at 12385.

Thus, by ensuring that a bidder would not end up on a low VHF channel, where digital coverage issues are by far the most significant, an otherwise reluctant broadcaster may be inclined to participate in the auction. The Commission also should favor post-auction requests for waivers of the VHF power and height limits because that too would encourage broadcasters to participate as UHF to VHF bidders.[28] Further, in order to better ensure that the broadcasters seeking to only relocate to a high VHF channel have the opportunity to do so, the Commission should permit broadcasters to participate by relinquishing a high VHF channel in exchange for a low VHF channel.[29]

USCC also supports the Commission's proposal to allow broadcasters to bid to accept additional interference from other broadcast stations or reduce their service areas or population served by a set amount. As the Commission notes, these options might permit greater repacking, and thus the clearing of additional spectrum.[30] Similarly, while USCC supports reasonable efforts to preserve broadcasters' existing coverage areas and populations served, it opposes any firm requirements to precisely replicate stations' current coverage areas or continue to provide service to all of the specific viewers that now receive stations' over-the-air broadcast signals. Not only did Congress refrain from imposing such a requirement, instead creating a flexible "reasonable efforts" standard,[31] but precise coverage replication would be impossible given the fact that stations will be moving to new channels with different propagation characteristics. Instead, the Commission should permit a minimal amount of new interference beyond its current 0.5 percent *de minimis* standard. For instance, when the Commission last undertook a substantial reorganization of the broadcast television bands, it revised the *de minimis* standard to instead

[28] *See id.* at 12385.
[29] *See id.* at 12385-86.
[30] *See id.* at 12386.
[31] *See* Spectrum Act §6403(b)(2).

allow for a 2 percent increase in interference, finding this was "needed to provide flexibility for broadcasters in the implementation of DTV."[32]

Further, USCC urges the Commission not to remove the benefits of providing additional bid options by shutting out a willing reverse auction participant simply because the broadcaster's market could produce a sizeable amount of spectrum through the repacking process alone. Not only would this be counter to the Commission's goal of repurposing the maximum amount of UHF spectrum possible, but, in some cases, it could be financially unwise. For instance, one estimated average cost to repack a full-power station is $885,500, and the estimated average cost to repack a low power Class A station is $267,375.[33] Because these sums exceed the market value of many stations, in some instances it could cost less to allow a willing broadcaster to voluntarily participate in the reverse auction rather than force it to remain on the air and relocate to a new channel.

Similarly, the Commission should not decline to repack a station simply because a certain amount of spectrum could be made available in a market without relocating the station to a new channel. Because the Spectrum Act only permits one repacking of the broadcast television bands, the Commission must take full advantage of this lone opportunity to maximize the amount of spectrum that can be made available for innovative wireless broadband services. And the Commission need not worry that the $1.75 billion allocated for the repacking process would be insufficient under this approach because, as demonstrated in the attached economic analysis,

[32] *Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service*, Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order, 13 FCC Rcd 7418, 7450 (1998).
[33] *See* C. Bazelon, C. Jackson & G. McHenry, *An Engineering and Economic Analysis of the Prospects of Reallocating Radio Spectrum from the Broadcast Band through the Use of Voluntary Incentive Auctions*, p. 1 (Sept. 19, 2011) ("*Incentive Auction Paper*") (attached hereto as Attachment B).

the costs of repacking likely will add up to only $775 million.[34] In other words, there will be more than enough money to repack every station able to relocate to a new channel in its market.

In addition, USCC urges the Commission to set a high reserve price, or maximum payment, for the reverse auction. Doing so would greatly incentivize broadcaster participation without creating any unnecessary risks because, if broadcaster interest is significantly greater than expected, the Commission would lower these prices as the auction progressed. USCC also supports auctioning 600 MHz licenses that would be impaired to some extent by ongoing broadcast operations. So long as potential bidders are fully informed regarding the level of impairment in a license area, no reason exists to withhold a license from a willing bidder. In fact, because these licenses would sell for less, some bidders may have a particular interest in impaired licenses, particularly if the non-impaired portions of the license area complement the bidder's other spectrum holdings. The Commission also could make impaired licenses more attractive to potential bidders by adjusting any performance requirements for the 600 MHz band to account for such impairment, similar to how it accounted for the presence of government lands within 700 MHz license areas.[35]

Below, USCC strongly urges the Commission to license the 600 MHz band using a mix of EA and CMA license areas. In addition to the various and substantial benefits USCC details below, the use of these small license areas could help to maximize the amount of repurposed spectrum. For instance, while a larger license area could be significantly impaired by ongoing broadcast operations, that large area could include several smaller license areas that would experience little to no interference from these broadcasters. In other words, by licensing the 600 MHz band on the basis of small geographic areas, the Commission could offer additional

[34] *See id.*
[35] *See 700 MHz Second R&O*, 22 FCC Rcd at 15350.

licenses that would have minimal impairment from broadcast operations. Finally, USCC urges the Commission to make participation in the reverse auction as simple and painless as possible for broadcasters. For instance, the "short-form" application should require only the minimum necessary information. All potential reverse auction participants already hold FCC authorizations, so there is no need for these preliminary applications to require extensive information. By making these initial steps as simple and quick as possible, broadcasters would be more likely to test the reverse auction waters, and perhaps then become full-fledged participants.

II. THE COMMISSION SHOULD ADOPT A MIX OF SMALL GEOGRAPHIC LICENSE AREAS

In order to promote competition and ensure the deployment of rural networks, the Commission should establish a mix of small geographic license areas for the 600 MHz band. USCC agrees with the Commission that offering a portion of the licenses on an Economic Area ("EA") basis would be appropriate for the 600 MHz band.[36] As the Commission recently noted, licensing spectrum on an EA basis "balances the Commission's goals of encouraging the offering of broadband service both to broad geographic areas and to sizeable populations."[37] However, USCC strongly urges the Commission to also offer a sufficient number of 600 MHz band licenses on the basis of Cellular Market Areas ("CMAs"). Offering a mix of geographic areas would provide the opportunity for all to obtain spectrum. Small carriers would have an opportunity to compete for CMAs and larger carriers could compete for EAs. Large carriers would also have the opportunity to supplement their spectrum in other bands with CMAs, or aggregate CMAs as needed. Moreover, by having a mix of market sizes, there will be a larger

[36] *See* NPRM, 27 FCC Rcd at 12411.
[37] *Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands*, Report and Order and Order of Proposed Modification, WT Docket No. 12-70, FCC 12-151, ¶ 50 (rel. Dec. 17, 2012) ("*AWS-4 R&O*").

number of overall auction participants, resulting in more robust competition for all types of market areas. Simply put, having a variety of small license areas will advance the interests of all carriers, incumbents and new entrants alike, as well as the overall public interest.[38]

A. CMA-Based Licensing Would Increase Competition, Promote Rural Deployment, and Benefit All Carriers.

CMAs must be designated as 600 MHz market areas in order for small markets and rural areas to be adequately served and a diversity of licensees to be achieved.[39] These smaller license areas are necessary to preserve opportunities for small and regional carriers, as well as new entrants, to provide an important source of competition, variety, and diversity in rural and less densely populated areas.[40] As the Commission has observed, CMAs "permit entities who are only interested in serving rural areas to acquire spectrum licenses for these areas alone and avoid acquiring spectrum licenses with high population densities that make purchase of license rights too expensive for these types of entities."[41] CMAs also "represent known area sizes to many business entities, especially small regional and rural providers,"[42] and they "correspond to the needs of many customers, including customers of small regional and rural providers."[43] Consequently, licensing a sufficient portion of the 600 MHz band using service areas no larger

[38] *See Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd 8064, 8083 (2007) ("*700 MHz R&O*") (agreeing that a "mix of smaller license sizes would provide a more balanced set of initial licensing opportunities at this time and make available more licenses to match the needs of different potential users."); *id.* at 8082 ("We find that providing a mix of geographic licensing areas in the 700 MHz Band will balance the demand for differently sized licenses demonstrated in the record and enhance access to this spectrum by a variety of potential licensees.").

[39] *See Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59)*, Report and Order, 17 FCC Rcd 1022, 1061 (2002) ("*Lower 700 MHz R&O*") ("Licensing a portion of the Lower 700 MHz Band over [CMAs] balances the playing field such that small and rural providers will have an opportunity to participate in the auction and the provision of spectrum-based services.").

[40] *See Service Rules for Advanced Wireless Service in the 1.7 GHz and 2.1 GHz Bands*, Order on Reconsideration, 20 FCC Rcd 14058, 14064 (2005) ("*AWS-1 Recon Order*") ("[W]e find that more spectrum should be licensed on an RSA/MSA basis to meet the needs of rural carriers…"); *id.* at 14065 ("[T]hese types of smaller geographic service areas provide entry opportunities for smaller carriers, new entrants, and rural telephone companies.").

[41] *See Service Rules for Advanced Wireless Service in the 1.7 GHz and 2.1 GHz Bands*, Report and Order, 18 FCC Rcd 25162, 25177 (2003) ("*AWS-1 R&O*"); *see Lower 700 MHz R&O*, 17 FCC Rcd at 1061 ("[CMAs] can be the focus of smaller carriers that do not wish to bid on or provide service to larger regions.").

[42] *Lower 700 MHz R&O*, 17 FCC Rcd at 1061.

[43] *Id.*

than CMAs would be the most effective means for the Commission to foster the prompt availability of competitive wireless broadband services to rural markets.[44]

However, it is not only rural and small companies that would benefit from licensing the 600 MHz band on the basis of CMAs. Rather, the use of CMAs would allow more targeted spectrum acquisition and result in greater efficiencies for both large and small applicants, while not discriminating in favor of any single business plan.[45] It would allow bidders to acquire precise locations without also acquiring – and excluding other carriers from serving – those additional areas that would otherwise accompany the target locations in a larger license area. For example, large carriers could benefit from the use of CMAs because they could acquire additional spectrum in urban areas (where demand is greatest and capacity most constrained) without having to also acquire rural areas they do not intend to serve.[46] At the same time, bidders who value rural areas could compete for those licenses without competing against bidders who only want urban areas. Because CMA-sized licenses would permit carriers of all sizes to avoid also purchasing spectrum in areas where they would not, at least in the near-term, deploy networks, licensing the 600 MHz band using these "smaller geographic blocks [would] avert[] the phenomenon of huge tracts of licensed territory being left unserved."[47]

The use of CMAs also would create various benefits specific to the incentive auction. For instance, CMAs "could potentially support much greater variation in the amount of reclaimed spectrum from area to area," and thereby permit the Commission to "license more wireless spectrum that is not encumbered by potential interference with nearby remaining

[44] *See AWS-1 R&O*, 18 FCC Rcd at 25177 ("By being smaller, [CMAs] provide entry opportunities for smaller carriers, new entrants, and rural telephone companies. Their inclusion in our band plan will foster service to rural areas and tribal lands and thereby bring the benefits of advanced services to these areas.").
[45] *See AWS-1 Recon Order*, 20 FCC Rcd at 14066 ("RSAs and MSAs allow entities to mix and match rural and urban areas according to their business plans…").
[46] *See AWS-1 R&O*, 18 FCC Rcd at 25176-77 ("These local service areas will be optimal for incumbent operators who may need spectrum capacity only in limited areas.").
[47] *AWS-4 R&O*, FCC 12-151, ¶ 50.

broadcast television spectrum."[48] As the attached maps demonstrate, the amount of spectrum that could be cleared through repacking alone varies significantly based on the size of the license areas. CMA-based licensing, as compared to using EA license areas, would greatly increase the number of markets that would have 85 MHz of spectrum, or significantly more, available through repacking alone.[49] Moreover, the amount of spectrum available through repacking alone would be nearly nonexistent under an REAG-based licensing approach. In fact, four of the six REAG license areas in the continental United States would have no free spectrum whatsoever from repacking alone.[50] In stark contrast, licensing the West or Great Lakes REAGs, for example, on a CMA basis would create many license areas that have 121 MHz or more available through repacking alone.[51]

B. Licensing Any Portion of the 600 MHz Band on a Nationwide or Large Regional Basis Would Limit the Amount of Repurposed Spectrum, Disadvantage Smaller Carriers, and Hinder Rural Deployment, While Not Providing Any Substantial Benefit to the Few Carriers That Desire Large Service Areas.

USCC strongly opposes licensing any portion of the 600 MHz band on a nationwide or large regional basis. Specific to the incentive auction, the Commission recognized that, "if only a few broadcasters in one geographic market voluntarily relinquish their spectrum usage rights, [the Commission] would be constrained by that amount of available spectrum as the baseline for offering wireless spectrum in the broader area."[52] The result would be that the spectrum would "not be put to its highest valued use,"[53] which would undermine both the great potential of this spectrum to expand wireless broadband coverage to vast areas of this nation and the

[48] NPRM, 27 FCC Rcd at 12411.
[49] *See* Attachment A, pp. 2-3, 5-6.
[50] *See id.* at 4-6.
[51] *See id.* at 8-9.
[52] NPRM, 27 FCC Rcd at 12410.
[53] *Id.*

Commission's statutory obligation to ensure the "efficient and intensive use of electromagnetic spectrum."[54]

More generally, the use of these large service areas skews auctions in favor of large bidders, effectively foreclosing smaller bidders from participating in an auction. Not only do small carriers lack the need for large swaths of territory, they lack the financial resources to compete for nationwide or large regional licenses. Unlike the national carriers, smaller carriers cannot afford to acquire and "warehouse" spectrum for future use that does not meet their near-term business objectives. Thus, the practical effect of having a band plan that includes large market areas is to place a significant portion of the auctioned spectrum in the hands of the few national carriers, who historically have not given priority to small and rural markets.[55] Rather, large carriers' direct priority, and understandably so, is to the major metropolitan areas because the profit margins are larger with a mass market service offering. In contrast, smaller carriers desire to serve small and rural markets. However, these carriers will not have this opportunity if they are excluded from the forward auction by the prohibitively high prices associated with nationwide or large regional licenses. As a consequence, rural deployment of the innovative and advanced types of services made possible by the 600 MHz spectrum would likely be significantly delayed, if not precluded entirely, if the Commission licenses this spectrum on a nationwide or large regional basis.

Moreover, although the use of large service areas would substantially disadvantage small and regional carriers, as well as the rural customers they hope to serve, the same would not be true for larger bidders, who would still have realistic opportunities to aggregate EA and/or CMA

[54] 47 U.S.C. §309(j)(3)(D).
[55] *Fifteenth Competition Report*, 26 FCC Rcd at 9839 ("Generally, as the population density decreases, the under-1 GHz spectrum holdings of the large providers decrease, and those of regional and smaller companies increase.").

licenses by outbidding smaller bidders.[56] In other words, auctioning small license areas benefits all carriers by allowing them to take a building block approach and assemble as much coverage area as is needed. For instance, "with respect to larger carriers, the Commission has said that aggregation at auction of smaller spectrum licenses and blocks may provide bidders with greater flexibility to implement their business plans as compared with a more traditional approach of defining an optimal size."[57] But the same is not true if the initial allocation blocks are overly large at the outset. While bidders can aggregate contiguous markets in the bidding process, there is no mechanism during the auction for a bidder to partition geographic areas. Indeed, the Commission's anti-collusion rules would, absent a joint bidding agreement, prevent a bidder from approaching other bidders to determine whether they would be interested in buying a portion of the territory in a license block that exceeded the bidder's business objective. In sum, a band plan with ample small license area opportunities encourages diverse auction participation while still providing options for bidders with regional and national footprint needs.

C. The Theoretical Availability of Secondary Market Transactions is Woefully Insufficient to Counterbalance the Negative Consequences of Offering Large Geographic License Areas.

While large carriers have the opportunity to aggregate smaller license areas in order to achieve their preferred nationwide or large regional areas, it is unlikely that small and regional carriers would ever be able to access spectrum once it is acquired by the large carriers. Although the Commission proposes to permit 600 MHz band licenses to be partitioned, disaggregated or leased, such divestitures have been, and likely will continue to be, the exception rather than the rule. As a consequence, the theoretical availability of these secondary market transactions is unlikely to provide small and regional carriers with timely or adequate access to spectrum.

[56] *See* NPRM, 27 FCC Rcd at 12411 ("EAs nest within and may be aggregated up to larger license areas … for operators seeking larger service areas.").
[57] *AWS-1 Recon Order*, 20 FCC Rcd at 14066.

First, there is a reasonable likelihood that the national carriers will resist making any of their spectrum available on the secondary markets because of their unknown future needs for this spectrum. Competition in major urban areas is likely to be fierce and subject to uncertainties about the spectrum resources needed to remain competitive. The national carriers engaged in this intense competition will be unwilling to speculate about their spectrum needs, and therefore will have strong incentives not to sell or lease spectrum that might put them at a competitive disadvantage or dilute the value of their spectrum assets in case of future sale.

Second, from the perspective of large national carriers, the potential income they could earn by leasing or selling spectrum in rural areas is quite small compared to the profits they seek from utilizing the large licenses in major urban markets. As a consequence, they likely, and rationally, could decide to focus their efforts on capturing market share and rolling out new services in their principal markets rather than diverting resources to secondary market transactions. Simply put, the transactional costs of making such spectrum available to companies who actually intend to use it to provide service to rural areas nullify any economic benefits of such a transaction. Further, even if the national carriers did offer some of their spectrum on the secondary market, the smaller carriers in need of this spectrum would be forced to incur these same transaction costs. In contrast, auctioning licenses "on a CMA basis may allow small and rural providers to obtain license areas that meet their needs while avoiding the transaction costs associated with obtaining access to spectrum in the secondary market."[58]

Third, even in the unlikely event that large carriers prove willing to partition and disaggregate large service areas to some extent, they will be very unlikely to cede all control over such licenses to carriers that could pose any competitive threats to them. Instead, any transfer of spectrum rights to potential competitors is likely to be accomplished pursuant to

[58] *700 MHz Second R&O*, 22 FCC Rcd at 15319.

partnership or other arrangements that require smaller carriers to cede control of, and revenues derived from, the spectrum. Such arrangements are not only unattractive to smaller carriers, but are likely to result in decreased competition because potential competitors of the large carriers would become their affiliates. In sum, small and regional carriers are likely to encounter substantial, and perhaps insurmountable, delays and costs in obtaining spectrum through secondary markets. The Commission therefore must structure the forward auction to permit these carriers to bid directly on licenses rather than be forced to rely on problematic subsequent secondary markets, and thus be dependent on large carrier cooperation.

D. The Commission is Statutorily Obligated to Provide a Mix of Small License Areas.

Providing a mix of small license areas also is necessary for the Commission to comply with its statutory obligations. For instance, the Spectrum Act requires the Commission to "consider assigning licenses that cover geographic areas of a variety of sizes."[59] In addition, auctioning the 600 MHz band only on the basis of large geographic areas likely would prevent, or at least significantly deter, small and regional carriers from successfully participating in the forward auction. This would be inconsistent with the Commission's obligations to "avoid[] excessive concentration of licenses,"[60] to promote "economic opportunity for a wide variety of applicants,"[61] and to "ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women are given the opportunity to participate in the provision of spectrum-based services."[62] Moreover, if the Commission establishes population-based build-out requirements, licensees of large service areas could meet these benchmarks by focusing almost exclusively on urban areas, which would withhold the potential benefits of this

[59] Spectrum Act §6403(c)(3).
[60] 47 U.S.C. §309(3)(B).
[61] 47 U.S.C. §309(4)(C)(ii).
[62] 47 U.S.C. §309(4)(D); *see AWS-1 R&O*, 18 FCC Rcd at 25175.

new spectrum allocation from rural areas, where broadband service is most needed.[63] Clearly, this would contravene the statutory directive for the Commission to ensure the widest possible deployment of communications services, including to rural areas, by promoting "an equitable distribution of licenses and services among geographic areas."[64] In contrast, by auctioning the 600 MHz band using a mix of small license areas, the Commission could fulfill all of these statutory obligations.[65]

E. The Propagation Characteristics of the 600 MHz Band Further Support the Use of Small License Areas.

Another factor which supports licensing the 600 MHz band using a mix of EA and CMA license areas is that this spectrum is particularly well-suited for the rapid and efficient deployment of mobile and other advanced services in high-cost rural areas.[66] This is true because lower frequencies travel further at a given power level, which enables a larger area to be served from a single cell site. These expanded coverage areas make the initiation and expansion of service possible in situations where it was previously not economical to do so, and therefore makes the 600 MHz band especially important as a means of providing cost-effective advanced services in rural and underserved areas. In short, because of the superior technical features of the 600 MHz band, it is essential that additional licensing opportunities be made available for

[63] *National Broadband Plan*, p. 22 ("[M]ost areas without mobile broadband coverage are in rural or remote areas.")
[64] 47 U.S.C. §309(4)(C)(i); *see Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 19078, 19081 (2004) ("*Facilitating Rural Services R&O*") ("One of the Commission's primary statutory obligations, as well as one of its principal public policy objectives, is to facilitate the widespread deployment of facilities-based communications services to all Americans, including those doing business in, residing in, or visiting rural areas.").
[65] *See 700 MHz R&O*, 22 FCC Rcd at 8083 ("[P]roviding a mix of licenses … will advance the Commission's statutorily directed goals to promote service to rural areas, promote investment in and the rapid deployment of new technologies and services, avoid the excessive concentration of licenses, and provide for the dissemination of licenses among a wide variety of applicants.") (citations omitted).
[66] *See id.* at 8082 ("In determining the size of service areas, the Commission has stated as a general principle that it will consider licensing spectrum over a range of various sized geographic areas, including smaller service areas such as MSAs/RSAs, where consistent with the record in that proceeding and with other factors that may be relevant to the spectrum.") (internal citations and quotation marks omitted).

regional, rural and local carriers to acquire licenses so that they can be in a position to provide the same cost-effective advanced services as national carriers with the financial resources to acquire licenses covering large service areas.

F. Past Auctions Demonstrate the Substantial Benefits of Small License Areas.

The results of past auctions further support the use of CMAs and EAs rather than nationwide or large regional license areas. For instance, the Commission has noted that the "opportunities afforded by providing licenses with a mix of geographic areas were seen in the results of Auction No. 66 involving AWS-1 licenses, where many different bidders won smaller and mid-sized licenses, such as CMAs and EAs."[67] Auction No. 66 also demonstrated what logic dictates – that small and rural carriers cannot successfully compete for licenses auctioned on the basis of larger geographic areas. Specifically, in Auction No. 66, small companies acquired nearly half the CMA licenses, while national carriers acquired nearly 70% of the large regional licenses. Auction history also shows that offering spectrum only for large geographic areas limits the number of capable bidders, which reduces competition during the auction process. In contrast, when service areas are comparatively small, such as CMA-sized areas, there are more auction participants, increased bidding activity, and higher auction revenues. This point is exemplified by the participation and bidding activity in Auction No. 44 for license Blocks C and D in the Lower 700 MHz band. The CMA licenses offered according to CMA boundaries attracted more activity from companies of all sizes, and the bids for the six EAG licenses in combination were less than the sum of bids for all of the CMA licenses, even when the difference in bandwidth between Blocks C and D is taken into account.

[67] *Id.* at 8083.

III. THE COMMISSION SHOULD CONDUCT THE REVERSE AUCTION FIRST TO PERMIT FREQUENCY-SPECIFIC, RATHER THAN GENERIC, LICENSES TO BE OFFERED IN THE FORWARD AUCTION

USCC urges the Commission to conduct the auctions sequentially, with the reverse auction taking place first. As the Commission recognized in the NPRM, "conducting the reverse auction first may be preferable, because it would allow greater certainty about the number of licenses available in each geographic area in the forward auction, based on broadcaster participation in the reverse auction."[68] Further, conducting the reverse auction first would promote the ability to auction frequency-specific licenses. Offering generic licenses in the forward auction would be a novel and untested approach, and would add yet another level of complexity to this already monumental undertaking. In contrast, the Commission and the industry have substantial experience with auctions offering frequency-specific licenses. Frequency-specific licenses also would provide potential bidders with the certainty required for business planning purposes, which would increase auction participation and the value of the licenses being auctioned, and thus help maximize auction revenue.[69]

Auctioning generic licenses would be particularly detrimental to smaller bidders. If generic blocks are made available in the forward auction, an additional auction stage would be necessary to assign specific frequencies to the winning bidders.[70] Regardless of how the Commission would structure this additional auction stage, smaller bidders would be disadvantaged. Accepting additional bids obviously would harm smaller bidders because they lack the enormous financial resources of the large national carriers, and thus could not outbid a large carrier focused on acquiring particular frequencies in a market. This could lead to much of

[68] NPRM, 27 FCC Rcd at 12379.
[69] *See id.* ("The timing of the reverse and forward auctions will affect the information available when bidding in each auction…").
[70] *See id.* at 12378.

the spectrum purchased by smaller carriers being assigned to pass bands devoid of the large national carriers, which would pose significant interoperability risks. Because these smaller carriers lack the market power to drive the device ecosystem, they could find themselves in a situation similar to the Lower 700 MHz A Block licensees, who have had great difficulty acquiring consumer devices for this spectrum. This would delay network deployment by these carriers, and would substantially reduce the value of their licenses.

These same interoperability concerns could arise even if the frequency assignment procedures did not involve additional bidding. The Commission contemplates that, if used, this procedure "would assign continuous blocks to bidders that bid for multiple blocks in the same geographic area and could take into account the need to coordinate frequencies across adjacent areas."[71] Because the large national carriers likely will bid aggressively in the forward auction, and because these carriers would be both more likely to have multiple blocks in the same market and licenses in adjacent markets, this assignment procedure could lead to one or more pass bands being occupied primarily, or even exclusively, by the national carriers. This assignment procedure therefore could force all other 600 MHz licensees into one or more pass bands largely devoid of national carriers and their ability to drive the device ecosystem.

Clearly, the Commission should auction only frequency-specific licenses given these various harms that would arise by offering generic licenses. In contrast, the only potential benefit of generic licensing noted in the NPRM relates to the speed of the forward auction.[72] USCC, and likely the majority of potential forward auction participants, would prefer a successful auction over a quick one.

[71] *Id.*
[72] *See id.*

USCC also notes that the Commission can be confident that, even if it maximizes the amount of repurposed spectrum, the forward auction will produce far more than enough revenue to meet all of the closing conditions imposed by the Spectrum Act. Accordingly, any apprehension that conducting the reverse auction first could lead to the collapse of the entire incentive auction process would be misplaced. As demonstrated in the attached economic analysis, auctioning 120 MHz of spectrum could raise approximately $40.0 billion,[73] while the cost of clearing this amount of spectrum would be approximately $15.2 billion – $14.4 billion to compensate broadcasters participating in the reverse auction and $0.78 billion to relocate the remaining broadcasters to new channels.[74] This would leave $24.7 billion to be split between the Public Safety Trust Fund and the U.S. Treasury.[75] And this amount could be even higher since these figures were calculated using an approach that "is highly conservative and likely overestimates payments to broadcasters."[76] Moreover, even smaller amounts of auctioned spectrum would produce substantial forward auction revenues. For instance, auctioning 102 MHz of spectrum would raise approximately $34.7 billion, while auctioning 84 MHz would raise approximately $29.1 billion.[77] Not only are these sums substantial in themselves, but it would cost less to clear these smaller amounts of spectrum – $11.6 billion for 102 MHz and $8.2 billion for 84 MHz.[78] The result would be an auction surplus of $23 billion for 102 MHz and $20.9 billion for 84 MHz.

[73] *See Incentive Auction Paper*, pp. 2 & 39, Table 8.
[74] *See id.* at 22 & 39, Table 8.
[75] *See id.* at 2 & 39, Table 8.
[76] *Id.* at 8.
[77] *See id.* at 39, Table 8.
[78] *See id.* at 22 & 39, Table 8.

IV. THE COMMISSION SHOULD ADOPT INTEROPERABILITY REQUIREMENTS FOR THE 600 MHz BAND

USCC applauds the Commission for setting forth the goal of "encouraging interoperability" in deciding how best to license the 600 MHz band.[79] Interoperability will be essential to achieving the extraordinary potential of the 600 MHz spectrum to greatly expand access to mobile and other wireless broadband services. The Commission has an opportunity here to build upon the record in its pending interoperability proceeding[80] regarding the market's failure to achieve interoperability in the Lower 700 MHz band. That lack of interoperability has stranded investment in this spectrum and drastically delayed the deployment of advanced mobile broadband services to many rural and underserved areas.

It is essential for the Commission to avoid the debilitating proliferation of multiple band plans, particularly overlapping band plans, which continue to handicap deployment and roaming options on Band 12 spectrum in the Lower 700 MHz band. In order to do so, the Commission should require that: (1) all mobile devices designed to operate on 600 MHz paired spectrum, including asymmetrically paired 600 MHz spectrum, must tune to all such 600 MHz paired frequencies; and (2) all 600 MHz networks operating on such 600 MHz paired frequencies must permit the use of such devices.

USCC agrees that the Commission should attempt to minimize the number of band plans that need to be supported in mobile devices using the 600 MHz spectrum, and to the extent possible "create large amounts of contiguous spectrum in a single band, minimize fragmentation of spectrum, and minimize proliferation of separate bands for flexible use spectrum."[81] However, at this early stage in the proceeding, it seems likely that there will be significant

[79] NPRM, 27 FCC Rcd at 12415.
[80] *See* WT Docket No. 12-69.
[81] NPRM, 27 FCC Rcd at 12417.

differences in the amount of cleared spectrum in individual markets that could threaten achievement of device interoperability based on market forces alone. As the Commission has already foreseen, varying amounts of spectrum across different markets could present technical challenges as the Commission attempts to avoid multiple band plans, each requiring different filters and/or duplexers.

For example, it is unclear how many license blocks offered in the forward auction will be cleared in the Commission's repacking process on a nationwide basis. If these cleared blocks are relatively few, this implies that in many areas the blocks offered in specific markets in the forward auction will be subject to interference protection requirements (*e.g.*, under Section 27.60 of the Commission's rules)[82] and/or will be required to include unique filter designs and/or other interference mitigation techniques in their devices where reception of co-channel and adjacent channel incumbent broadcast signals in the device filter pass band could be anticipated.

In the case of the Lower 700 MHz band, this situation led to the adoption of a unique overlapping band class, Band 17, which vastly disrupted Band 12 device development and deployment and led to Commission consideration of interoperability requirements for the Lower 700 MHz band. USCC is concerned that, without interoperability requirements, a comparable proliferation of disparate 600 MHz band plans could similarly cripple device development and delay network deployment by 600 MHz licensees. It could cause the largest carriers to bid only for nationwide cleared spectrum, which could be designed and implemented under a single band that does not overlap other spectrum bands that are not comparably cleared.

Also in response to the Commission's question about selective support of a "specific subset of bands" in devices, USCC strongly supports the adoption of an interoperability

[82] As the Commission is aware, Lower 700 MHz A Block spectrum has not been deployed in many areas because of exclusion zones created under Section 27.60 of the Commission's rules, involving requirements to meet a minimum desired-to-undesired signal ratio with respect to proximate full power and Class A television stations.

requirement in the situation described by the Commission so that, "if a provider's license area covers only two of the four band plans available nationwide,"[83] it would not be permitted to support only that subset of bands in its devices. Indeed, the Commission should consider ways that its repacking could be implemented to prevent the assignment of all license blocks cleared on a nationwide basis to a single band plan family.

The Commission's proposed initiative to create "families" of related band plans and, depending on the amount of spectrum that is relinquished, "extended families" of band plans has the potential to create productive options for the deployment of interoperable devices without adverse consequences in terms of cost, size, complexity, or delayed vendor availability. But rather than risk losing the potential benefits from these band plans, and in order to permit a maximum amount of spectrum to be repurposed for wireless broadband services, the Commission should adopt USCC's interoperability proposal, which would allow it to ensure the benefits of interoperability in the 600 MHz band while also pursuing other important band plan proposals designed to maximize the potential of this spectrum.

The NPRM mentions numerous consumer benefits that would arise from full interoperability across the 600 MHz band, and USCC's proposal would carry forward the Commission's "longstanding interest in promoting the interoperability of mobile user equipment in a variety of contexts as a means to promote the widest possible deployment of mobile services, ensure the most efficient use of spectrum, and protect and promote competition."[84] For instance, "[b]eginning with the licensing of cellular spectrum, the Commission has opined that consumer equipment should be capable of operating over the entire range of cellular spectrum as

[83] NPRM, 27 FCC Rcd at 12415.
[84] *Promoting Interoperability in the 700 MHz Commercial Spectrum*, Notice of Proposed Rulemaking, 27 FCC Rcd 3521, 3523, n.5 (2012).

a means to insure full coverage in all markets and compatibility on a nationwide basis."[85] Similarly, although market conditions made a PCS interoperability requirement unnecessary, in that proceeding[86] the Commission again emphasized the importance of interoperability, finding that it would "deliver benefits to consumers and help achieve [the Commission's] objectives of universality, competitive delivery of PCS, that includes the ability of consumers to switch between PCS systems at low cost, and competitive markets for PCS equipment."[87]

Interoperability in the 600 MHz band is especially important because it is likely that the large amount of spectrum available in areas outside the largest markets will be acquired in the forward auction by small and regional licensees in order to serve small and rural markets, where mobile broadband coverage is currently lacking. Similar in many respects to the adjacent Lower 700 MHz band, "the propagation characteristics of the 600 MHz band should allow for robust coverage at a lower cost than some other comparable bands."[88] Thus, as it has done in the past, the Commission must strive to adopt spectrum policies, including an interoperability requirement, that will benefit consumers in unserved and underserved areas.[89]

Adopting a clear interoperability requirement for the 600 MHz band at this stage is necessary so that potential bidders in the forward auction that are not large enough to drive device development will know in advance that the 600 MHz band will conform to the Commission's traditional model of full interoperability. Carriers face substantial competitive disadvantages when they cannot timely offer the newest devices to their customers or potential

[85] *Id.* at 3530 (internal quotation marks omitted).
[86] The FCC's approach to auctioning PCS spectrum (*e.g.*, without large regional blocks or package bidding), coupled with the lower level of market concentration which prevailed at the time, ensured that all PCS licensees would work together to build a common ecosystem. Today's circumstances are markedly different.
[87] *Amendment of the Commission's Rules to Establish New Personal Communications Services*, Memorandum Opinion and Order, 9 FCC Rcd 4957, 5021-22 (1994).
[88] NPRM, 27 FCC Rcd at 12487-88.
[89] *See*, *e.g.*, *700 MHz Second R&O*, 22 FCC Rcd at 15362 ("Rapid deployment and ubiquitous availability of broadband services across the country are among the Commission's most critical policy objectives.").

customers. For instance, in its most recent wireless competition report, the Commission found that a carrier's "portfolio of handsets and devices may be a significant non-price factor affecting its ability to compete for customers."[90] This is because mobile handsets and devices "directly affect the quality of a consumer's mobile wireless experience, and, hence, they factor into a consumer's choice of a wireless provider."[91] As a result, the large national carriers currently enjoy a significant "head-start" advantage in the 700 MHz band because the lack of interoperability has permitted them to offer services and products that are unavailable to smaller carriers. Such a "'head-start' advantage can constitute a significant hurdle to new competition."[92]

In the NPRM, the Commission recognizes that device interoperability can have important benefits for small, rural, mid-sized and other potential bidders because they would have timely access to affordable 600 MHz devices. Access to a competitive supply of interoperable devices will factor into the expectations of these bidders regarding their ability to meet any performance requirements established for the 600 MHz band. For example, lack of interoperability in the Lower 700 MHz band has recently resulted in a large number of build-out waiver requests relating in whole or in part to the limited availability of devices. In other words, an interoperability requirement could be a principal factor in encouraging robust auction participation, which would help promote and enable the rapid and widespread deployment of 600 MHz wireless broadband networks. Further, even if rural networks could be built out despite a lack of full interoperability, 600 MHz carriers, and in turn their customers, would be forced to

[90] *Fifteenth Competition Report*, 26 FCC Rcd at 9717.
[91] *Id.*
[92] *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Service*, Order on Reconsideration and Second Further Notice of Proposed Rulemaking, 25 FCC Rcd 4181, 4192 (2010); *see Interconnection and Resale Obligations Pertaining to Commercial Mobile Radio Services*, First Report and Order, 11 FCC Rcd 18455, 18465 (1996) ("The advantages such incumbency conveys are well understood.").

pay higher prices for a limited variety of handsets due to a lack of volume production and the resulting loss of beneficial economies of scale. Significantly, a lack of affordable handsets has the greatest detrimental effect to lower-income consumers, another demographic group that lags in broadband adoption.[93]

An interoperability requirement also is needed because the size of national carriers, particularly AT&T and Verizon Wireless, permits them to drive device development in ways which, as preferred customers of device manufacturers and component vendors, has allowed them to obtain early access to a large variety of advanced devices. The negative effects of this relationship between the largest carriers and device manufacturers was recently confirmed by statements made by representatives from device component manufacturers during the Commission's *Forum on Future of Wireless Band Plans*. In response to a question raised by Commission staff regarding the problems encountered by smaller service providers in acquiring the device technologies they need for their spectrum holdings, several vendors confirmed that high volume component development is consistently given priority, and that some vendors simply decide not to design components if the market for that equipment is not sufficiently large.[94] Clearly, in the absence of an interoperability requirement, the device procurement

[93] *See National Broadband Plan*, p. 5 ("While broadband adoption has grown steadily, it is still far from universal. It lags considerably among certain demographic groups, including the poor, the elderly, some racial and ethnic minorities, those who live in rural areas and those with disabilities.").

[94] The following extended statements by vendor representatives participating in the *Forum* are excerpted and summarized as follows: Gene Tkachenko, Corporate Fellow, TriQuint Semiconductor, confirmed that, generally speaking, component manufacturers "spend more time on more higher volume and higher visibility projects." As a result, Mr. Tkachenko noted that more difficult filters "may get developed after the first high volume designs are really done and nailed, so that may delay some of the technology that gets to those smaller operators." Similarly, William Mueller, Strategic Marketing Manager, Avago, noted that manufacturers "working on economies of scale [] have to get a return on [their] design investment..." Thus, if "a whole bunch of new spectrum com[es] online at the same time, [manufacturers] are going to … go on down the line of how many are here and how many are there, etc." According to Mr. Mueller, this business practice arises because "there's an investment that the component makers have to make to make the components." Finally, Jeff Shamblin, Chief Scientist, Ethertronics, noted that, because "[t]he antennas in today's mobile devices are custom designs," it is "a business decision of taking the design time and the tooling costs and amortizing over a smaller production run if your project is directed toward a carrier that's going to have a limited production."

practices of these largest carriers significantly disadvantage small, rural, mid-sized and other potential competitors by withholding, or at least significantly delaying, access to essential consumer equipment. This harms competition in the wireless broadband marketplace, as well as consumer choice, price competition, and service innovation.

In addition, a lack of device interoperability across the 600 MHz band could severely limit small and regional carriers' ability to enter into data roaming arrangements, the benefits of which the Commission has deemed "substantial."[95] For small and regional carriers, the ability to enter into data roaming arrangements is essential because these licensees are dependent upon roaming agreements for the provision of seamless communications.[96] Thus, without the ability to offer their customers broad roaming capabilities, these carriers cannot become viable competitors to the nationwide carriers.[97] In other words, these carriers' ability to enter into roaming arrangements would lead to increased competition, which would advance the public interest because greater competition leads to lower prices and greater utilization of broadband data services.[98] Moreover, because "most areas without mobile broadband coverage are in rural or remote areas,"[99] the ability of these licensees to offer ubiquitous mobile broadband services is crucial to ensuring that all Americans have broadband access.[100] As the Commission has found,

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[95] *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Service*, Second Report and Order, 26 FCC Rcd 5411, 5427 (2011) ("*Data Roaming Order*").
[96] *See id.* at 5419 ("Providers with local or regional service areas need roaming arrangements to offer nationwide coverage…").
[97] *See id.* ("[C]onsumers increasingly expect their providers to offer competitive broadband data services, [so] the availability of data roaming arrangements can be critical to providers remaining competitive in the mobile services marketplace."); *id.* at 5480 (Statement of Chairman Genachowski) ("The evidence shows that mobile providers must be able to offer nationwide voice and data plans to have any chance of competing in today's market.").
[98] *See id.* at 5428 ("[A] rough estimate is that the benefits from the increased competition would be in the billions of dollars per year."); *id.* at 5427 ("[M]illions of American consumers who otherwise might not have full access to mobile broadband services will benefit from adoption of the rule.").
[99] *National Broadband Plan*, p. 22.
[100] *See Data Roaming Order*, 26 FCC Rcd at 5426 ("We note again the importance of roaming to consumers in rural areas, where mobile data services may be solely available from small rural providers…"); *id.* at 5480 (Statement of Chairman Genachowski) ("[T]he the absence of data roaming guarantees will limit our broadband future by eliminating choices, especially in rural areas, or in some cases delaying or preventing access to mobile broadband at

the ability to offer data roaming "encourage[s] service providers to invest in and upgrade their networks and to deploy advanced mobile services ubiquitously, *including in rural areas*."[101]

For these reasons, USCC urges the Commission to require that: (1) all mobile devices designed to operate on 600 MHz paired spectrum, including asymmetrically paired 600 MHz spectrum, must tune to all such 600 MHz paired frequencies; and (2) all 600 MHz networks operating on such 600 MHz paired frequencies must permit the use of such devices.

V. THE COMMISSION SHOULD ADOPT AN AUCTION-SPECIFIC SPECTRUM AGGREGATION LIMIT

USCC agrees with the Commission's proposal to adopt an open eligibility standard for the 600 MHz band.[102] All parties should be eligible to hold licenses in this new and valuable spectrum band. However, USCC also strongly endorses a limit on the percentage of 600 MHz spectrum any one applicant or affiliated applicants may acquire in a single market in the forward auction, for the following reasons.

As the NPRM notes, the amount of spectrum acquired in a wireless auction is currently subject to a "screen" analysis.[103] However, in practice, no meaningful limitations have been placed on the amount or type of spectrum that carriers have been allowed to acquire in recent auctions. "Greenfield" spectrum has essentially been wide open, with licensee diversity concerns only being represented by having different sized markets. The effects of this *laissez faire* spectrum policy have, however, sometimes been contrary to the public interest.

Perhaps the leading example is Auction 73, which auctioned 700 MHz licenses. The consequences of Auction 73 for Lower 700 MHz licensees have been profound and long lasting.

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all."); *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers*, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd 15817, 15828 (2007) ("[I]t is in the public interest to facilitate reasonable roaming requests by carriers on behalf of wireless customers, particularly in rural areas.").

[101] *Data Roaming Order*, 26 FCC Rcd at 5443 (emphasis added).

[102] *See* NPRM, 27 FCC Rcd at 12483.

[103] *See id.* at 12484; *see also Union Telephone Company, Cellco Partnership d/b/a Verizon Wireless, Applications for 700 MHz Band Licenses, Auction No. 73*, Memorandum Opinion and Order, 23 FCC Rcd 16787, 16791 (2008).

AT&T Mobility was the largest buyer of licenses in the Lower B Block, acquiring 227 CMA licenses in that block (704-710 MHz, 734-740 MHz). It also acquired a dominant position in the Lower C Block by virtue of its acquisition of Aloha Communications. Verizon Wireless bought seven REAG licenses in the Upper C Block (746-757 MHz, 776-787 MHz), which cover the entire contiguous United States as well as Hawaii. And, in 2010, Verizon Wireless purchased the REAG covering Alaska. Both carriers have used those blocks for critical LTE deployments. However, a consequence of AT&T's dominance of the Lower B and C Blocks, and its decision not to acquire Lower A Block licenses, was the development of Band 17, a subset of the Lower 700 MHz A, B and C Block frequencies comprising 3GPP Band 12. Band 17 only covers the Lower 700 MHz B and C Blocks, and is not interoperable with Band 12.[104] The lack of interoperability between devices designed to operate only on the B and C Blocks (Band 17) and devices designed to utilize all three paired Lower 700 MHz blocks (Band 12) has greatly hampered the development of networks using the A Block and has left this spectrum underutilized at a time of great spectrum scarcity.

This stranding of A Block spectrum has generated repeated requests for the Commission to restore interoperability across the Lower 700 MHz Band. USCC continues to support such a rulemaking because the delay in device development caused by the lack of interoperability has been damaging to carriers planning to utilize A Block licenses in their 4G deployments.

Even though USCC has demonstrated that an interoperability requirement would be in the public interest, it also notes that the issue would not have arisen if there had been a greater diversity of license winners in the A, B and C Blocks from the outset. Interoperability would have been a practical necessity if carriers held spectrum in each of the blocks because all of those

[104] *See, e.g.*, Comments of United States Cellular Corporation, Docket No. 12-69 (June 1, 2012); Reply Comments of United States Cellular Corporation, Docket No. 12-69 (July 6, 2012).

carriers would have worked together to develop technology and drive a robust device ecosystem. Ensuring that all Lower 700 MHz licensees become vibrant competitors will still serve the public interest. But now the task is more complex than it need have been.

The lesson to be drawn from this experience is that the Commission's public interest objectives in any spectrum auction should include fostering a competitive wireless industry, which will serve the long-term economic interests of the United States. Such a policy would indeed be responsive to the mandate of Section 309(j)(3)(B) of the Communications Act[105] to "avoid excessive concentration of licenses" and to disseminate licenses among "a wide variety of applicants."[106]

USCC proposes that no 600 MHz auction applicant be allowed to acquire more than 25 percent of the repurposed broadcast spectrum made available for auction in any licensed market area. Further, if the Commission unwisely declines to adopt interoperability requirements for the 600 MHz band, and assuming sufficient spectrum is repurposed so that "extended families" of band plans are necessary,[107] this 25 percent spectrum aggregation limit should apply individually to both the amount of downlink spectrum made available in the smaller family and the amount of additional downlink spectrum made available in the larger family. Only by doing so could the Commission help ameliorate the significant harms likely to arise in the absence of explicit interoperability requirements. Under either approach, the proposed spectrum aggregation limit would promote competition and a diversity of licensees, and would provide structural encouragement for interoperability and roaming.

There also is precedent for such auction limitations. Prior to 2000, former Section 24.710 of the Commission's rules prohibited a PCS "auction applicant from winning (but not from

[105] 47 U.S.C. §309(j)(3)(B).
[106] *See* NPRM, 27 FCC Rcd at 12484.
[107] *See id.* at 12408-09.

acquiring in the secondary market) more than 98 C and F Block licenses."[108] That rule was repealed only because of the then applicable wireless spectrum "cap," for which there is no equivalent today.[109] It should also be noted that, at the beginning of the PCS auctions in the mid-1990s, the Commission's rules prohibited an entity with an ownership interest in a cellular license in a given market amounting to twenty percent or more from obtaining a 30 MHz PCS license if the populations of the cellular system and PCS license areas overlapped significantly. Moreover, the Commission's cellular cross-ownership rule forbade common ownership of cellular licenses in the same market, and after 1994, the Commission employed strict "per market" 45 MHz and then 55 MHz spectrum "caps" to limit spectrum concentration.[110] And while the Commission has relaxed all of those limitations over time as more wireless spectrum became available, the precedents are relevant to this allocation of new and highly desirable wireless spectrum.

USCC recognizes the complexity of the Commission's task in developing a workable 600 MHz band plan in light of the uncertainty about the particular spectrum that will ultimately be available in each market. Implementing reasonable spectrum limitations in this context will obviously not be easy. However, the Commission should consider it an important principle in developing final rules that one or two carriers should not be permitted to dominate the 600 MHz band. In fact, spectrum limitations are especially necessary if the Commission decides to auction "generic" licenses, with a second round to determine specific frequencies in a particular market, in order to prevent the largest carriers from simply outbidding all others for the best spectrum.

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[108] *Amendment of the Commission's Rules Regarding Installment Payment Financing for Personal Communications Services (PCS) Licensees*, Sixth Report and Order on Reconsideration, 15 FCC Rcd 16266, 16292 (2000) (internal citation omitted).
[109] *Id.* at 16292-95.
[110] *See* former §§24.204, 20.6 and 22.942 of the Commission's Rules.

The disappearance in the last decade of almost all small and mid-sized wireless carriers is a fact often noted in recent Commission proceedings. If the remaining Tier II and Tier III wireless carriers are to have a fighting chance to survive and prosper in the coming years, they absolutely must have access to this spectrum, which will have the best propagation characteristics of any wireless spectrum, from the outset. A result similar to that in Auction 73 is simply not acceptable.

VI. THE COMMISSION SHOULD ADOPT A LICENSE TERM SUFFICIENTLY LONG TO ADDRESS THE UNIQUE CHARACTERISTICS OF THIS SPECTRUM AND AUCTION PROCESS

USCC urges the Commission to adopt an initial license term for the 600 MHz band which provides licensees more than ten years from the grant of their licenses. The Commission has previously concluded that a longer initial license term is necessary where the relevant spectrum band, like here, is occupied by other services, and therefore must be cleared before new licensees can successfully begin to deploy their networks. For instance, with respect to the AWS-1 band, the Commission established an initial license term of 15 years, with subsequent ten-year renewal terms, for authorizations issued on or before December 31, 2009.[111] The Commission adjusted its usual ten-year license term to account for "the relocation and band clearance issues associated with these bands"[112] and to "provide investors with the necessary assurances that a sufficient amount of time [would] be available to recoup the initial costs of developing and deploying advanced wireless networks in these bands."[113] The Commission concluded that these benefits of a longer license term, when combined with a renewal

[111] *See* 47 C.F.R. §27.13(g).
[112] *AWS-1 R&O*, 18 FCC Rcd at 25190.
[113] *Id.*

expectancy, would "help to provide a stable regulatory environment that [would] be attractive to investors, and thereby encourage development of these frequency bands."[114]

In the alternative, if the Commission is disinclined to grant initial 600 MHz band licenses for fifteen years, it should, at the very least, extend the term for a period not less than ten years after the repurposed spectrum has been cleared of broadcast operations. No matter how smoothly the repacking process goes, there will be a substantial delay between the time 600 MHz licenses are first awarded and when all broadcasters have ceased operating in this spectrum. For instance, after the reverse and forward auctions are complete, the Commission must provide sufficient notice to all stations that are assigned new channels. After such notice, the Commission will provide these stations with at least 30 days, and likely longer, to file applications for construction permits.[115] Once the Commission processes all of these applications, in itself a potentially lengthy process given the sheer number of applications likely to be filed in a very short timeframe, stations will have 18 months, or more, to construct their new facilities, and thus cease operations in the 600 MHz band.[116] And the Commission may grant six-month extensions to broadcasters requiring additional time to construct their new facilities.[117] Thus, it is likely that the 600 MHz band will not be free from broadcast interference for a minimum of two years following the auctions, and quite possibly much longer. The result would be that the initial 600 MHz license term would be significantly shorter than the ten-year term generally afforded to CMRS licensees.

This approach also would be consistent with the initial license terms established for the 700 MHz band, which, like here, involved the relocation of broadcasters before wireless carriers

[114] *Id.* at 25191.
[115] *See* NPRM, 27 FCC Rcd at 12461-62.
[116] *See id.* at 12464-65.
[117] *See id.* at 12465-66.

could deploy their networks. The Commission extended the initial 700 MHz license terms on several occasions in order to provide licensees sufficient build-out time after the spectrum was cleared of interfering operations.[118] This extended license term was designed to "offer licensees regulatory certainty and help promote investment in the band"[119] and to "provide sufficient time for the recovery of costs related to the development and deployment of new services, especially those based on technologies that are more advanced, more expensive, and which may take longer to develop."[120] Because that reasoning applies equally here, the Commission should adopt a similar approach, and provide 600 MHz licensees the standard ten-year license term once their service areas have been cleared of broadcast operations. Otherwise, 600 MHz licensees likely would have insufficient time to meet the various challenges related to the construction of their networks. For instance, infrastructure equipment and handsets for this new spectrum allocation will not be immediately available to even the largest licensees. In addition, space on existing towers is becoming increasingly scarce, and the ability to build new towers is becoming increasingly difficult due to zoning, environmental, and aesthetics concerns. Given these potential obstacles, it would serve the public interest for the Commission to establish a genuine ten-year initial license term for the 600 MHz band. Both incumbents and new entrants would be more inclined to participate in the forward auction, and have greater incentive to develop a full suite of services that cover the broadest possible geographic area, if they are accorded a sufficient initial license term.

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[118] *See 700 MHz R&O*, 22 FCC Rcd at 8095 ("We will revise our rules to provide that initial authorizations for the 700 MHz Commercial Services Band will have a term not to exceed 10 years from February 17, 2009, which is the firm deadline for the DTV transition."); *see also Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules*, First Report and Order, 15 FCC Rcd 476, 504 (2000) ("[W]e are concerned that the continued existence of incumbent broadcasters in the licensed spectrum may retard a licensee's development and use of the spectrum. Thus, we are modifying the license term as it relates to the 747-762 MHz and 777-792 MHz bands, to accommodate licensees' need for additional time to develop and use this spectrum, in light of its continued use by broadcasters until 2006.").

[119] *700 MHz R&O*, 22 FCC Rcd at 8096.

[120] *Id.*

VII. THE COMMISSION SHOULD NOT IMPOSE ADDITIONAL LICENSE RENEWAL STANDARDS

In the NPRM, the Commission proposes to:

> [A]dopt service-specific 600 MHz license renewal requirements consistent with those adopted in the *700 MHz First Report and Order* and which form the basis of the renewal paradigm proposed in the *WCS Renewal NPRM and Order*.[121]

USCC strongly opposes this proposal. Like all other Lower Band 700 MHz licensees, USCC will have to deal with the 700 MHz renewal standards adopted in 2007 when it files its renewal applications in 2019. But there is no reason to adopt those unworkable and unnecessary standards for the 600 MHz band, especially given the interference constraints under which 600 MHz licensees may have to operate during their initial license terms.

USCC, like virtually all other wireless licensees, set out its objections to creating a new wireless "renewal paradigm" at length in the wireless renewal docket, a docket in which, it should be noted, the Commission has taken no action for two-and-a-half years.[122] USCC incorporates those comments by reference here. To summarize briefly, USCC believes that the wireless renewal standards proposed in the WCS proceeding and now here are profoundly ill-advised and contrary to the public interest. They would generate enormous and unnecessary new paperwork burdens for affected licensees and create investment-killing uncertainty concerning the security of all wireless licenses, including 600 MHz licenses, as there would be no certainty that a license would be renewed even if the licensee had met all applicable performance requirements and otherwise complied with the Commission's rules.

Such rules would replace the present wireless renewal procedures, which have worked well and have served the public interest. At present, in the absence of competing applications

[121] NPRM, 27 FCC Rcd at 12492.

[122] *See, e.g.*, Comments of United States Cellular Corporation, WT Docket No. 10-112 (Aug. 6, 2010); Reply Comments of United States Cellular Corporation, WT Docket No. 10-112 (Aug. 23, 2010).

and/or petitions to deny, most cellular and PCS licenses are routinely renewed. Under the proposed standards, however, the Commission would have to consider mandatory, detailed renewal "expectancy" filings in light of "factors" not otherwise reflected in the Commission's actual service rules. This proposed procedure would introduce an unprecedented and undesirable level of uncertainty and difficulty into the license renewal process. To determine whether a license should be renewed based on levels of "investment" or service "interruptions" or service to "rural areas" or other factors not included in any Commission rule would also be arbitrary and capricious as a matter of law.

The new standards also would repudiate the idea of "flexibility" in meeting customer needs, and would fail to acknowledge either the economic and interference constraints faced by licensees or the problem that sometimes meeting one service objective may mean not being able to meet others. It may be that the Commission would not, in fact, deny license renewal applications by licensees that have met their build-out requirements and otherwise complied with the Commission's rules. However, if that is to be the case, there is no need for the newly proposed standards. USCC believes that allowing competing renewal applications also serves the public interest and allows real world comparisons of actual and proposed service. Accordingly, the best path forward in this proceeding would be to permit such competing applications and, in their absence, process unopposed renewal applications in the same manner as renewals in the cellular and PCS services.

VIII. THE COMMISSION SHOULD PROVIDE LICENSEES SUFFICIENT FLEXIBILITY IN HOW THEY DEPLOY THEIR NETWORKS, AND IN NO EVENT SHOULD IMPOSE UNDULY STRINGENT BUILD-OUT REQUIREMENTS OR DRACONIAN PENALTIES

Although the Commission must take certain steps to ensure adequate spectrum utilization and rapid deployment of new wireless services, inflexible performance requirements are

unnecessarily burdensome, unjustified by market realities, and contrary to sound economic principles and business strategies. Their effect is to discourage new investment, limit service to the public, force suboptimal network deployments, and diminish auction revenues, both because of decreased auction participation and because the value of each license is diminished. Inflexible performance requirements can foreclose desirable spectrum uses and leave the spectrum fallow for a longer period of time than with more reasonable benchmarks. The Commission therefore must ensure that any performance requirements applied to the 600 MHz band not only promote robust deployment but adequately reflect the practical realities of deployment in a band newly-authorized for mobile broadband service. And the Commission should not unfairly punish licensees – especially in rural areas – who cannot engage in aggressive build-out for perfectly good economic or situational reasons.

A. Inflexible Build-Out Requirements are Unnecessary, Arbitrary, and Ignore Market Realities.

Creating a regulatory structure that imposes a single dimension on network investment would be antithetical to the Commission's long-held preference for market-driven service requirements.[123] As Congressman Walden recently noted to the Commission, "markets, not the whims of regulators, are best suited to ensure that spectrum is put to productive and innovative use."[124] Where licensees spend millions, if not billions, of dollars to acquire spectrum at auction, market incentives already provide every motive for carriers to start earning revenues as quickly

[123] *See, e.g., Amendments of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 14165, 14283 (2004) ("*Facilitating Broadband Access R&O*") ("[W]e believe a market-oriented approach to spectrum policy best ensures the build-out of wireless facilities and broader provision of wireless services. We believe that economic forces will guide competing providers to innovate and broaden deployment of services.") (internal citation omitted).
[124] *Keeping the New Broadband Spectrum Law on Track*, Hearing Before the House Subcommittee on Communications and Technology (Dec. 12, 2012) (prepared statement of Rep. Walden).

as possible.[125] Winning 600 MHz bidders therefore will have a significant economic incentive to put the spectrum to beneficial use as soon as practicable, and a substantial disincentive to warehouse the spectrum for any considerable period of time.[126]

USCC therefore urges the Commission to avoid imposing build-out requirements beyond the reasonable requirement to provide "substantial service." Additional requirements will have the effect of imposing artificial government-mandated burdens when market forces are adequate – and preferred – to assure that facilities will be constructed and operated in the public interest once sufficient demand exists and once a particular licensee's business plan permits. Even with the propagation characteristics of the 600 MHz band, and even if an attractive mix of small geographic license areas are offered in the forward auction, unduly stringent build-out requirements would raise the risk of license forfeiture and reduce the flexibility of carriers to design and deploy their networks in a manner that best promotes their business plans. Further, there are often circumstances outside the control of a licensee that inhibit its ability to meet a particular benchmark. As such, the Commission has in the past appropriately balanced the need for performance requirements with the ability to provide flexibility to licensees to meet these requirements.[127] USCC submits that there is no need in this instance to depart from well-functioning precedent.

Another substantial problem is that any fixed coverage requirement, whether population- or geography-based, has the inevitable effect of forcing carriers to build their networks according

[125] *See Implementation of Section 309(j) of the Communications Act – Competitive Bidding*, Second Report and Order, 9 FCC Rcd 2348, 2358 (1994) ("*Competitive Bidding Second R&O*") ("Auctions are [] likely to reinforce the desire of licensees to make efficient and intensive use of [] spectrum. … [T]he licensees' need to recoup the out-of-pocket expenditure for a license should provide additional motivation to get the most value out of the spectrum.").
[126] *See Fifteenth Competition Report*, 26 FCC Rcd at 9716 ("To create a customer base, a new facilities-based entrant must provide network coverage that is sufficient to attract new customers…").
[127] *AWS-1 R&O*, 18 FCC Rcd at 25192 ("Compared to a construction standard, Section 27.14(a)'s substantial service requirement will provide licensees greater flexibility to determine how best to implement their business plans based on criteria demonstrating actual service to end users. This requirement provides the flexibility required to accommodate the new and innovative services that we believe will be forthcoming in these bands.").

to a government-imposed timetable rather than according to market demands. The Commission has previously acknowledged that this leads to various public interest harms because "construction benchmarks focusing solely on population served or geography covered do not necessarily reflect the most important underlying goal of ensuring public access to quality, widespread service."[128] In fact, "construction benchmarks that mandate population- or geographic-specific coverage might hinder licensees from serving niche or less populated areas, and might unintentionally discourage construction in rural areas."[129] In contrast, "[w]ith the additional flexibility afforded by a substantial service option, [] licensees [are] free to develop construction plans that tailor the deployment of services to needs that are otherwise unmet, such as the provision of service to rural or niche markets."[130] At the same time, licensees would have ample incentive to rapidly deploy ubiquitous, high-quality networks.[131]

Uniform percentage coverage standards also are inherently arbitrary. There is no objective, concrete basis for determining whether a particular percentage of area covered or population served is either too high or too low, or whether a certain timeframe to meet these benchmarks is too short or too long. Uniform build-out requirements also fail to properly account for dramatic variations in population density from one region to another. There is no reason to assume that the optimal build-out will be the same in a densely populated northeastern state and a sparsely populated state in the western plains. Giving licensees greater flexibility allows each licensee to take into account variances in the competitive landscape, population density, and other important demographics pertaining to particular services and licenses. This is

[128] *Facilitating Broadband Access R&O*, 19 FCC Rcd at 14284.
[129] *Facilitating Rural Services R&O*, 19 FCC Rcd at 19120; *see Facilitating Broadband Access R&O*, 19 FCC Rcd at 14284 ("[M]erely satisfying such benchmarks does not necessarily demonstrate adequate deployment in rural areas, to niche markets, or to discrete populations or regions with special needs.").
[130] *Facilitating Rural Services R&O*, 19 FCC Rcd at 19122.
[131] *See Facilitating Broadband Access R&O*, 19 FCC Rcd at 14283 ("We believe that establishing more flexible rules will result in ubiquitous, high-quality service to the public and at the same time encourage investment by increasing the value of licenses. We believe more flexible rules will make licensees more economically viable…").

especially true for spectrum, such as the 600 MHz spectrum, that will be used for advanced services and may be deployed differently by each licensee.

The Commission has also recognized that greater flexibility is necessary where, as here, the spectrum to be auctioned is highly-encumbered.[132] As the Commission explained in the Lower 700 MHz proceeding, "[b]ecause new licensees in different geographic areas will not be similarly situated due to the varying levels of incumbency, specific benchmarks for all new licensees would be inequitable."[133] In contrast, by applying the substantial service standard to the 600 MHz band, the Commission would have the necessary "flexibility to consider the particular circumstances of each licensee and how the level of incumbency has had an impact on the licensee's ability to build-out and commence service in its licensed area."[134] If the Commission nevertheless determines that more concrete guidance is necessary to incentivize licensees to quickly deploy service and avoid spectrum warehousing, as well as to more objectively gauge the adequacy of the deployment of 600 MHz networks, specific benchmarks and timetables could "be assimilated into the substantial service framework as safe harbors, rather than as goals unto themselves."[135]

B. Stringent Build-Out Requirements Harm Small and Rural Carriers to an Even Greater Extent.

Stringent construction timetables and benchmarks would weigh most heavily on new entrants and on smaller and regional carriers seeking to expand their existing footprints. Such licensees do not have extensive, if any, existing networks and operations which would provide

[132] *See Lower 700 MHz R&O*, 17 FCC Rcd at 1079 ("The substantial service standard is particularly appropriate for the Lower 700 MHz Band given the highly-encumbered nature of this particular spectrum."); *AWS-1 R&O*, 18 FCC Rcd at 25192 ("[T]his substantial service standard is particularly appropriate here because the incumbency of federal and other current licensees in these bands would make specific benchmarks for all new licensees inequitable.").
[133] *Lower 700 MHz R&O*, 17 FCC Rcd at 1079.
[134] *Id.*; *see also AWS-1 R&O*, 18 FCC Rcd at 25192 ("[T]he standard we adopt today provides us with the flexibility to consider the particular circumstances of each licensee and how the level of incumbency has had an impact on a particular licensee's ability to build-out and commence service in its licensed area.").
[135] *Facilitating Broadband Access R&O*, 19 FCC Rcd at 14286.

them with a foundation to facilitate meeting these requirements. In contrast, large national incumbent carriers have extensive economic resources and existing networks and operating infrastructure which make the application of stringent performance requirements far less damaging. The result is that "[i]nfrastructure capital expenses for a new entrant can be higher than those for existing service providers."[136] Moreover, large incumbent providers typically already own a significant number of towers or have tower leasing arrangements in place. As the Commission has observed, "in many geographic areas, the most desirable positions for antennas on communications towers are occupied by existing tenants, leaving subsequent tenants with a choice of antenna positions that may not be optimal for their needs."[137] Consequently, "tower siting costs and scarcity of desirable antenna positions may constitute significant entry barriers to new providers."[138] Small carriers also are more likely to serve rural areas, which means they also often lack the economies of scope and scale of carriers serving urban populations. It therefore costs more and takes more time to build out in rural areas. Finally, even if smaller carriers could meet an artificially short build-out deadline, there may be relatively few types of equipment available for use in this band in the early period after the spectrum is auctioned. Until the 600 MHz equipment market matures, smaller carriers would have limited options to meet a shortened build-out period and limited choices of equipment to make available for consumers.

This inherent disadvantage creates a serious risk that a strict coverage requirement, particularly one that falls during the midst of the license terms, would severely prejudice a new entrant seeking to bring a valuable competitive service to a market. As a result, such requirements would have the ironic, unintended consequence of further advantaging the already dominant national incumbent carriers by economically and operationally shackling new entrants

[136] *Fifteenth Competition Report*, 26 FCC Rcd at 9844.
[137] *Id.* at 9845.
[138] *Id.*

and small and regional carriers seeking to expand operations. Such new entrants and smaller carriers, who might otherwise have competed aggressively for licenses in the forward auction, would instead be forced to place lower valuations when bidding for 600 MHz licenses, if not forego bidding altogether, and thereby cede these licenses to national carriers who can value them more highly. Competition to the national carriers will decline, and new services and product innovation will be materially diminished. The losers ultimately are the very public that performance requirements are meant to assist.

C. If, Despite the Numerous Disadvantages That Would Arise From Inflexible Build-Out Requirements, the Commission Nevertheless Decides to Prescribe Uniform Construction Obligations, It Should Adopt Population-Based, Not Geography-Based, Benchmarks.

If, despite the disadvantages detailed above, the Commission insists on adopting inflexible build-out requirements, USCC would support the Commission's proposal to measure build-out progress according to percentage of population served within a license area,[139] and would urge the Commission to reject any calls for geography-based build-out requirements. Carriers provide wireless services for the benefit of the public, making coverage of land mass a poor measure of the public benefit. A geography-based milestone also would create a regulatory incentive to engage in economically irrational behavior. Because geographic benchmarks are extremely capital-intensive, licensees would be forced to divert capital into areas where it is uneconomic to provide additional services, thereby depriving investment where it would otherwise be more likely to produce benefits. It also could force licensees to deploy lower quality, less advanced networks based solely on license preservation. The result would be skeletal coverage at the expense of quality service, capacity, and advanced technologies. In contrast, population-based benchmarks would permit more effective and efficient network

[139] NPRM, 27 FCC Rcd at 12488.

deployments while still ensuring that a substantial portion of the population is served. Service could then be extended to less populated areas once economics permit.

Geography-based build-out requirements also ignore the stark disparities in population densities that exist today. Although rural counties comprise 86 percent of the geographic area of the United States, only 21 percent of the U.S. population lives in rural counties.[140] Geographic coverage requirements therefore could require carriers to build systems where no population exists, such as large sections of farmland and ranchland in the western United States. It is not clear that any public policy purpose would be served by carriers having to charge customers for coverage in remote unpopulated regions, and cross-subsidies of this nature are impossible to sustain. As a consequence, despite the propagation characteristics of the 600 MHz band, carriers would be hard pressed to justify the level of network deployment necessary to satisfy the benchmarks in less densely populated areas, making those areas much less attractive to acquire or to attempt to deploy. Geographic benchmarks therefore could have the unintended consequence of discouraging applicants from acquiring licenses in less densely populated areas, or cause viable bidders to avoid the auction altogether, which would further exacerbate the disparity between network coverage in urban and rural areas that geography-based benchmarks allegedly seek to address. This would also reduce auction revenues. Because a geographic-area build-out requirement would make deployment of new networks in markets containing sparsely populated areas less viable financially, bidding for those markets would be depressed, if such licenses attract any bids at all.

Further, construction of new networks is subject to a number of uncertainties beyond a licensee's control that may make it impossible to meet geographic build-out requirements. For instance, it is becoming increasingly difficult to build new systems as a result of local zoning and

[140] *See Fifteenth Competition Report*, 26 FCC Rcd at 9878.

other ordinances and requirements. A geographic build-out requirement therefore could cause carriers to lose licenses in areas where they have every intention and desire to build and would accord local authorities too much leverage to extract concessions from licensees. In this way, geography-based benchmarks also would discriminate against carriers entering a market for the first time. In contrast to incumbents, new entrants will need to secure land and tower space for their 600 MHz infrastructure. This would further reduce competition and dissuade network expansion into rural areas, and thus would be contrary to the Commission's spectrum goals and statutory obligations.

At the same time, geographic coverage requirements would not ensure network deployment in rural areas because, even if licenses for these markets are purchased at auction, there would be a very real possibility that the licensees would eventually be forced to relinquish their authority for areas that are uneconomic to serve. This spectrum would be reauctioned with little hope of being built the second time around. The result would be that the original licensee who was best positioned to build out these areas over time will not have the spectrum and the area will remain unserved. Finally, it would be far more difficult for the Commission to implement and enforce geographic benchmarks because these "fixed construction requirements do not easily permit the Commission to measure the deployment of service by a licensee."[141] In each instance, the Commission would be forced to: (a) determine an exact signal "contour" measurement technique despite the differing propagation characteristics of varying digital signal formats; and (b) exclude from such measurements bodies of water and government lands. These signal measurement issues would lead to endless and unproductive disputes.

[141] *Facilitating Broadband Access R&O*, 19 FCC Rcd at 14284.

D. If the Commission Insists on Establishing Uniform Build-Out Requirements, These Benchmarks Must Not Be Overly Stringent.

If the Commission is disinclined to reinstate its reasonable "substantial service" standard and permit the significant market-based incentives to guide network deployments, it must ensure that any performance requirements it adopts strike an appropriate balance between incentivizing deployment and affording licensees the flexibility necessary to put spectrum to its highest and best use. With this in mind, USCC first urges the Commission to avoid imposing an interim build-out requirement, an approach it has favored in the past. For instance, with respect to the AWS-1 spectrum, the Commission concluded that a mid-license term requirement was unnecessary, noting that, "in many instances, licensees may meet an interim population coverage requirement by installing a small number of cell sites in an urban market, with few cell sites in rural markets."[142] The Commission therefore declined to adopt an interim build-out requirement, which it found to be consistent with its "desire to provide flexibility to licensees to implement their business plans."[143] An interim benchmark also would force licensees to deploy only those technologies that will be available in the near-term. Many carriers plan to use the 600 MHz band for next generation broadband technologies, but these technologies are still in development. Licensees should not be forced to deploy networks using less advanced technologies. Not only would this be economically unreasonable and counterproductive, but it likely would delay subsequent deployment to the public of next generation networks.

At a minimum, the Commission should set the initial milestone for no less than five years after the 600 MHz band has been cleared of broadcast operations. Setting the first milestone at 5 years would be consistent with past auctions, and starting the build-out clock once the repacking process is complete would align the build-out timetable with USCC's reasonable license term

[142] *AWS-1 R&O*, 18 FCC Rcd at 25192.
[143] *Id.*

proposal. The reality of protracted delays in tower siting, permitting, and other local approvals that must be secured before each site is built make an earlier deadline premature. A shorter deadline therefore would particularly disadvantage new entrants, who will need to secure land and tower space for their network infrastructure, and whose access to equipment likely will be delayed. It is well documented that the large national carriers typically drive the market for equipment, and that equipment for rural and small carriers often is not available until several years after the initial deployment by large carriers. For these reasons, the Commission has in the past ultimately adopted longer interim benchmarks, and should do likewise here.[144]

Based on these same considerations, if the Commission does establish an interim build-out requirement, that benchmark should not require a 600 MHz licensee to provide signal coverage and offer service to more than 35 percent of the population in each of its license areas. A 35 percent interim benchmark would be consistent with the Commission's treatment of EA- and CMA-based licenses in the 700 MHz band.[145] Because the 700 MHz band has similar propagation characteristics, and because the Commission should license the 600 MHz band using a mix of EA and CMA licenses, a similar interim benchmark, if found to be necessary, would be appropriate here. Although the Commission recently proposed an interim benchmark of 40 percent for the H Block, the differences between that spectrum band and the 600 MHz band justify a lesser interim build-out requirement here. For instance, while deployment in the 600 MHz band will require licensees to construct entirely new systems, there is a real likelihood that

[144] *See*, *e.g.*, *700 MHz Second R&O*, 22 FCC Rcd at 15350 ("We are persuaded that a three-year build-out requirement would have a disproportionate impact on new entrants who have no existing networks or customers, as well as small or regional carriers who are looking to enlarge their operating footprint, but who do not already have extensive pre-existing infrastructure in place. In addition, we are allowing additional time for the development of new technologies that might be employed in this spectrum and giving licensees sufficient time to develop new services.").
[145] *See* 47. C.F.R. §27.14(g).

incumbent PCS licensees will acquire H Block authorizations in order to supplement their current spectrum holdings.[146]

With respect to a final build-out requirement, USCC believes that it should only apply at the end of the initial 600 MHz license term which, as detailed above, should not occur for at least ten years after this spectrum is cleared of all broadcast operations. Regarding a specific population coverage percentage for the final benchmark, USCC again urges the Commission to avoid imposing unduly stringent requirements. With this in mind, USCC proposes that the Commission require 600 MHz licensees to cover two-thirds of the population of their license areas by the end of their license terms, which would mirror the Commission's approach with respect to broadband PCS licensees.[147] Certainly, the Commission should not establish a final benchmark of more than 70 percent population coverage at the end of the license term because this would impose more stringent build-out requirements on 600 MHz licensees than those applied to 700 MHz licensees.[148] Doing so would unjustifiably differentiate between licensees in these comparable spectrum bands. If the Commission insists on uniform build-out requirements for the 600 MHz band, USCC asserts that its proposed timetables and percentage benchmarks would best serve the public interest while still affording licensees a degree of flexibility that will be necessary to expeditiously deploy advanced mobile broadband services in the 600 MHz band.

E. If the Commission Prescribes Uniform Build-Out Requirements, the Penalties for Failing to Meet These Benchmarks Must Not Be Unnecessarily Harsh.

The Commission also must avoid imposing unnecessary and draconian penalties for a licensee's failure to meet a built-out requirement. In this respect, although USCC believes that

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[146] *See Service Rules for the Advanced Wireless Services H Block – Implementing Section 6401 of the Middle Class Tax Relief and Job Creation Act of 2012 Related to the 1915-1920 MHz and 1995-2000 MHz Bands*, Notice of Proposed Rulemaking, WT Docket No. 12-357, FCC 12-152, ¶ 54 (rel. Dec. 17, 2012).
[147] *See* 47 C.F.R. §24.203(a).
[148] *See* 47 C.F.R. §§27.14(g)-(h).

an interim benchmark is unnecessary and counterproductive, if the Commission nevertheless establishes one, a failure to meet the interim benchmark should accelerate the final build-out requirement by only one year. Otherwise, small and rural carriers would be disadvantaged to an even greater extent by an interim build-out requirement. With respect to a failure to meet the final build-out requirement, USCC suggests that the Commission impose a "keep-what-you-use" penalty. Under such a rule, if a 600 MHz licensee misses its final construction benchmark in a particular service area, it could have its authorization revoked in the portions of that service area that it does not cover. A "keep-what-you-use" rule would provide sufficient incentive for 600 MHz licensees to meet their performance requirements, but would not risk leaving consumers without services that they may have been relying on for years. It also would treat 600 MHz licensees consistently with wireless operators in other commercial mobile bands.[149]

In addition, the tested "keep-what-you use" approach would be far more reasonable than a novel "use-it-or-share-it" penalty, which the Commission recently described as a "complex concept"[150] and which likely would cause interference to licensed 600 MHz operations. In rejecting this penalty for the Upper 700 MHz bands, the Commission noted that it had previously "declined to apply to the 700 MHz Band the unlicensed use rules that it adopted for the core TV spectrum."[151] Like the 700 MHz band, and in contrast to the core TV bands, the 600 MHz band "will have different services, with different interference considerations."[152] The Commission has recognized "the difficulty of allowing unlicensed use of white spaces in spectrum used by mobile devices."[153] Finally, under no circumstances should the Commission adopt a draconian penalty such as automatic license termination for failure to meet a milestone. Terminating a license for

[149] *See, e.g.*, 47 C.F.R. §§22.947, 22.949, 27.14(h)(1)-(2).
[150] *AWS-4 R&O*, FCC 12-151, ¶ 205.
[151] *700 MHz Second R&O*, 22 FCC Rcd at 15355.
[152] *Id.*
[153] *Id.*

failure to meet a performance benchmark – especially for missing an interim benchmark by only a *de minimis* amount – would cut off service to users, strand investment, and disserve the public interest.

IX. THE COMMISSION SHOULD NOT ALLOW COMBINATORIAL BIDDING FOR ANY 600 MHz LICENSES IN THE FORWARD AUCTION.

USCC strongly opposes any use of combinatorial, or "package," bidding in this extremely high stakes auction because of the bias, complexity, and minimal real world experience related to package bidding. It is important for the Commission to ensure that any rules promoting small carrier participation are not offset by other auction rules. At most, combinatorial bidding benefits only the largest carriers, who are able to bid on numerous licenses across the country at the expense of smaller carriers who focus on local markets and contiguous licenses. In practice, combinatorial bidding could virtually eliminate the opportunity for smaller and rural carriers to acquire licenses in the forward auction, without providing any substantial public interest benefits.[154] The Commission therefore should wholly reject combinatorial bidding.

A. Combinatorial Bidding Would Further Complicate an Already Monumental Undertaking.

Combinatorial bidding adds yet another layer of complexity to an auction,[155] and thus could cause delays or deter participation by potential bidders. For instance, combinatorial bidding increases the number of bid possibilities in each round of an auction. As such, the use of combinatorial bidding is contrary to the Commission's expressed intent "to select bidding

[154] *See Competitive Bidding Second R&O*, 9 FCC Rcd at 2366 (noting "that some of the conditions under which the advantages of combinatorial bidding are apt to be the greatest are not likely to be present for most FCC auctions. First, while certain licenses are likely to be worth more as part of packages, there is no evidence of an extreme discontinuity in value if one or more licenses in the package are not acquired. … Second, both the existence of an after-market and the proposed bid withdrawal penalty limit the risk associated with failing to acquire all the licenses in a desired package.").

[155] *See id.* ("Combinatorial bidding would also add one more layer of complexity to implementing an auction.").

procedures that are not overly complex relative to the task that they are meant to accomplish and which ensure that the full range of qualified bidders have access to the process."[156] Auction history also demonstrates the likelihood of delay that would result from package bidding. For example, although Auction No. 65 was conducted on a very small scale, Commission staff nevertheless had to halt the auction for two days due to unexpected complications associated with its combinatorial bidding software.

Avoiding additional complexity is particularly appropriate with respect to the upcoming incentive auction, which "will be the first such auction ever attempted worldwide."[157] In the NPRM, the Commission wisely stressed the need to keep this novel and already extremely complex auction as simple as possible.[158] Allowing combinatorial bidding for any of the 600 MHz licenses certainly would not help the Commission meet this goal. Moreover, because of the excellent propagation characteristics of the 600 MHz band and because of the large amount of spectrum that will potentially be made available, this auction is of great interest and importance to many current and potential wireless service providers, and thus likely will involve a large number of participants. As the Commission has observed, although "[t]he complexity of running and participating in a full combinatorial auction may be manageable with 10 bidders and 54 licenses, [] it may not be with hundreds of licenses and bidders."[159] The inevitable delays caused by combinatorial bidding also would make it more difficult for the Commission to meet

[156] *Id.* at 2361.
[157] NPRM, 27 FCC Rcd at 12359.
[158] *See id.* at 12549 (Statement of Chairman Genachowski) ("[A] key goal of our auction proposal is simplicity."); *id.* at 12551 (Statement of Commissioner McDowell) ("I have advocated that success will come more easily if we proceed with an eye toward regulatory humility, simplicity and restraint."); *id.* at 12554 (Statement of Commissioner Rosenworcel) ("Simplicity is key. Incentive auctions are an undeniably complex undertaking. But at every structural juncture, I believe that a bias toward simplicity is crucial."); *id.* at 12560 (Statement of Commissioner Pai Approving in Part and Concurring in Part) ("[W]e need to keep our rules as simple as possible. The incentive auction process is inherently complicated; we don't need to introduce unnecessary complexities.").
[159] *Competitive Bidding Second R&O*, 9 FCC Rcd at 2366.

its goal of completing the incentive auction in 2014, a goal strongly supported by the wireless industry.

B. Combinatorial Bidding Would Put Small and Regional Carriers at a Significant Disadvantage.

Permitting combinatorial bidding for any portion of the 600 MHz licenses would harm small, rural and regional carriers, as well as prospective new entrants, while benefitting only the largest carriers. Combinatorial bidding would add increased risk and uncertainty for small companies who lack the resources to hire game theorists to handle their auction participation. Combinatorial bidding also would increase the likelihood that large bidders will tie-up multiple licenses in nationwide or super-regional package bids, and thereby exclude smaller carriers with targeted business plans from acquiring the spectrum necessary to serve rural areas.

Further, combinatorial bidding gives rise to the well-recognized "threshold problem," which the Commission has described as:

> [T]he difficulty that multiple bidders for the single licenses (or smaller packages) that constitute a larger package may have in outbidding a single bidder on the larger package, even though the multiple bidders may value the sum of the parts more than the single bidder values the whole. This may occur because bidders for parts of a larger package each have an incentive to hold back in the hope that a bidder for another part will increase its bid sufficiently for the bids on the pieces collectively to beat the bid on the larger package.[160]

In other words, unlike a license-by-license aggregation strategy, combinatorial bidding can create a situation where the Commission is forced to accept a package bid for a group of licenses even though small or rural carriers may have placed higher bids, on a per-pop basis, for one or more of the licenses included in the package. The result is that combinatorial bidding "bias[es]

[160] *Auction of Regional Narrowband PCS Licenses Scheduled for September 24, 2003; Comment Sought on Package Bidding Procedures, Reserve Prices or Minimum Opening Bids, and Other Auction Procedures*, Public Notice, Report No. AUC-03-51-A (Auction No. 51), DA 03-1065, p. 4 (WTB Apr. 3, 2003).

auction results in favor of the combination bid,"[161] disadvantaging all but the largest bidders and likely excluding small bidders from any meaningful auction participation. These adverse consequences of combinatorial bidding raise legal issues as to whether the Commission has actually granted licenses to the parties that valued them most highly. Moreover, the bias against all but the largest bidders potentially has the effect of forcing all other bidders to bid more aggressively on the remaining licenses which are not included in any package. This distortion would increase the prices of these licenses, resulting in an extra burden on smaller bidders that may easily deprive them of licenses.

The unfortunate irony is that, in attempting to deal with the possibility of "exposure" problems for large bidders, package bidding creates substantial exposure risks for small bidders because of its potential to reactivate dormant bids. For example, a collection of small bidders who believed that they had been outbid on individual licenses by a package bid may find their "losing" bids active again if another losing bidder increases its bid by a margin that surpasses the package bid amount. In this circumstance, an auction participant can find itself with the high bid on a license that it had given up many rounds earlier. This creates obvious problems because bidders make decisions in each subsequent round based on the results of prior rounds. And this complexity only increases as an auction progresses because an increasing number of past bids become potentially active. It also increases the time required to make informed bidding decisions (especially for small bidders with limited resources) and, assuming the Commission appropriately extends the time for each round, could substantially lengthen the auction.

[161] *Competitive Bidding Second R&O*, 9 FCC Rcd at 2365.

C. While Combinatorial Bidding Would Significantly Disadvantage Small and Regional Carriers, the Hypothetical Advantage it Provides Nationwide Carriers is Unnecessary.

There simply is no validity to the claim that combinatorial bidding is needed in order to permit consolidation of large license areas because adequate spectrum aggregation opportunities are available to large carriers under the Commission's standard auction procedures or through the secondary market.[162] Prior auctions confirm this fact. For example, in Auction No. 66, SpectrumCo and T-Mobile were able to build virtually nationwide coverage without combinatorial bidding. Accordingly, there is no reason to subject smaller bidders to bias, strategic burdens and complicated package bidding procedures when standard auction procedures provide adequate spectrum aggregation opportunities.

D. The Use of Combinatorial Bidding Would Violate the Commission's Statutory Obligations.

Permitting combinatorial bidding also could run afoul of the Commission's statutory obligations. The uncertainty and strategic risk imposed by the use of these complex procedures could deter bidders from participating in the forward auction,[163] leading to a less competitive auction, lower auction revenues, and a high concentration of licenses amongst the few remaining bidders.[164] Moreover, package bidding would primarily disadvantage small and regional carriers, who typically are the only licensees willing to concentrate their build-out efforts in rural

[162] *See* NPRM, 27 FCC Rcd at 12411 ("[L]icensees may aggregate or otherwise adjust their geographic coverage through auction or through secondary markets."); *AWS-4 R&O*, FCC 12-151, ¶ 50 ("EA licenses can be aggregated up to larger license areas, including into MEAs or larger units, including nationwide.").
[163] *See* 47 U.S.C. §309(j)(4)(D) (FCC must "ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women are given the opportunity to participate in the provision of spectrum-based services").
[164] *See* 47 U.S.C. §309(j)(3)(B) (FCC must "promot[e] economic opportunity and competition … by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women").

and other unserved or underserved areas.[165] Combinatorial bidding also would permit large carriers to obtain a package of licenses for a total sum lower than what individual licensees are willing to pay on a per-license basis.[166] Finally, the complexity of, as well as the minimal real-world experience with, package bidding likely would delay the forward auction process, and thus the distribution of 600 MHz licenses.[167]

E. Combinatorial Bidding Should Not Be Permitted for Any 600 MHz Band Licenses.

Given the numerous adverse consequences detailed above that are likely to arise from the use of combinatorial bidding, and given the lack of any substantial public interest benefits or large carriers' need for package bidding in order to aggregate large license areas, the Commission should not allow package bidding for any 600 MHz licenses. A hybrid combinatorial approach, with package bidding for some licenses but not for others, would be inappropriate because it would apply a different set of bidding rules to licenses that are substitutes for one another, which would make it difficult for bidders to effectively manage their eligibility and would limit their ability to move from one block to another. Even if the Commission auctions the 600 MHz band on the basis of both EAs and CMAs, as it should, it must provide bidders with the flexibility to bid on all licenses and the ability to coordinate bidding strategies across these licenses, which would be impossible if some licenses are auctioned using package bidding while others are not. In other words, regardless of a bidder's preference with respect to geographic license area size, it should not be subjected to the harms associated with package bidding. Finally, limiting combinations to only some licenses would

[165] *See* 47 U.S.C. §309(j)(3)(D) (FCC must promote the "efficient and intensive use of the electromagnetic spectrum").
[166] *See* 47 U.S.C. §309(j)(3)(C) (FCC must avoid "unjust enrichment through the methods employed to award" spectrum).
[167] *See* 47 U.S.C. §309(j)(3)(A) (FCC must avoid "administrative or judicial delays").

"require a determination of the most valuable packages prior to the auction."[168] However, "[t]here is no simple way to make such a determination, and if there is a wide diversity of desired license groupings, offering only a limited set will not accommodate all preferences and may not enhance efficiency."[169]

X. THE COMMISSION SHOULD TAKE STEPS TO CLEAR THE 600 MHz SPECTRUM OF BROADCASTERS AS QUICKLY AS POSSIBLE

Given that consumer demand for wireless broadband spectrum already exceeds the supply of such spectrum, and given that such demand will continue to increase exponentially, USCC agrees with the Commission that the process of transitioning broadcasters out of the 600 MHz band "needs to be carried out promptly in order to get the reclaimed spectrum into the hands of the new licensees to address spectrum needs and allow them to serve their customers."[170] USCC therefore urges the Commission to take all reasonable steps possible to clear the 600 MHz band of interference from broadcasters, and thereby free up this spectrum to new and innovative wireless broadband services.

First, USCC agrees with the Commission that the typical three-year construction permit period is unnecessary here, and that 18 months would be a more appropriate and reasonable transition deadline.[171] In fact, 18 months likely would provide broadcasters more than enough time. As the Commission noted, "of the more than 100 licensees whose requests to substitute channels were granted towards the end of the digital transition, most completed construction within 12 months of receiving a construction permit."[172]

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[168] *Competitive Bidding Second R&O*, 9 FCC Rcd at 2366.
[169] *Id.*
[170] NPRM, 27 FCC Rcd at 12464.
[171] *See id.*
[172] *Id.* at 12464.

Second, the Commission should not grant multiple and/or prolonged extensions because this would undermine its sound proposal to limit construction permits to a period of 18 months. USCC therefore urges the Commission to apply its tolling criteria to any extension requests, and to limit all extensions to a total period of not more than six months.[173]

Third, USCC urges the Commission to adopt its proposal to permit broadcasters to elect reimbursement of their eligible relocation costs based on their estimated costs, and thereby receive advance payments.[174] This approach could substantially accelerate the repacking process because broadcasters without sufficient cash reserves could avoid the time that would otherwise be required to budget for out-of-pocket expenses. Also in this respect, the Commission should ensure that it devotes sufficient resources to, and provides broadcasters with adequate guidance regarding, this advanced payment process so that requests can be processed, and broadcasters paid, as quickly as possible.

Fourth, USCC supports "earlier deadlines for some stations in order to facilitate the overall transition by clearing the way for subsequent channel modifications."[175] Specifically, USCC supports earlier deadlines for winning license termination bidders and winning channel sharing bidders. The future plans for both of these types of winning bidders do not require the construction of new or substantially modified broadcast facilities. As a result, these stations should reasonably be expected to meet earlier transition/clearance deadlines, which "may make it easier for others to modify their transmission facilities,"[176] and thereby accelerate the entire repacking process. However, USCC does not support earlier deadlines for winning UHF to VHF

[173] *See id.* at 12465-66.
[174] *See id.* at 12468.
[175] *Id.* at 12465.
[176] *Id.*

bidders because these broadcasters would be required to construct substantially modified facilities and therefore could be deterred from participating in the auction.

Finally, USCC supports the Commission's proposal to allow stations to operate with temporary facilities while they complete construction.[177] This proposal could allow a station to transition to its newly-assigned channel, and thus clear the 600 MHz band, even though construction of its fully-authorized post-transition facilities may not be complete. This proposal also would serve the public interest because it would make it more likely that a station could complete its transition to a new channel without any loss of service to the public in circumstances where the station otherwise could not have done so.

XI. THE COMMISSION SHOULD TAKE IMMEDIATE ACTION IN ORDER TO CLEAR CHANNEL 51

As the Commission is well aware, 700 MHz licensees in the Lower A Block continue to encounter significant technical challenges to deploying wireless broadband services in this spectrum because, under Section 27.60 of the Commission's rules,[178] 700 MHz A Block licensees are required to meet a minimum desired-to-undesired signal ratio with respect to proximate full power and Class A television stations operating on Channel 51 in order to avoid potential harmful interference to off-air broadcast reception. USCC therefore strongly supports all Commission efforts to facilitate the voluntary relocation or relinquishment of Channel 51 broadcast operations in advance of the incentive auction and subsequent repacking process.

For instance, in addition to permitting a Channel 51 licensee to enter into an agreement with a 700 MHz licensee which requires the Channel 51 licensee to move to another channel, the Commission should allow private agreements that call for the broadcast licensee to vacate Channel 51 by either sharing the facilities of another broadcaster or ceasing broadcast operations,

[177] *See id.* at 12466.
[178] *See* 47 C.F.R. §27.60.

all while retaining the right to participate in the reverse auction based on its previous Channel 51 licensed operations. Similarly, the Commission should permit a Channel 51 licensee to decrease its operating parameters while continuing to broadcast on Channel 51 in order to accommodate Lower A Block 700 MHz operations, or if necessary in order to find another available channel for temporary operations, while retaining the right to participate in the reverse auction based on its previous, fully-authorized Channel 51 operations. The Commission also should allow the sale of a Channel 51 license to a third party, including a wireless carrier, who would be permitted to cease broadcast operations and subsequently participate in the reverse auction. Finally, the Commission should exercise its waiver authority to ease the DTV signal protection criteria in Section 27.60 of its rules in order to reduce the size of the "exclusion zones" around Channel 51 transmitters, which were designed to provide protection between two high-powered transmitters.

With respect to any of these private agreements, USCC urges the Commission to adopt an expedited process for effectuating the agreement's terms. Specifically, the Commission should establish a framework similar to that developed in 2000, where the Commission agreed to consider agreements between new 700 MHz licensees and licensees of incumbent television stations that would compensate the incumbents for converting to digital-only operations prior to the DTV transition. The Commission also established a presumption favoring the grant of such requests in certain circumstances. In taking these actions, the Commission recognized that "voluntary agreements between incumbent broadcast licensees and new 700 MHz licensees, if properly structured, will further the broad public interest in intensive and efficient use of the radio spectrum."[179] The same reasoning applies here. By expediting its existing processes for channel reassignment or license modification, the Commission would promote deployment of

[179] *Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules*, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, 15 FCC Rcd 20845, 20866 (2000).

wireless broadband service in the A Block and enable Channel 51 licensees to quickly implement alternative arrangements.

XII. CONCLUSION

The Spectrum Act's grant of incentive auction authority provides the Commission with a unique opportunity to repurpose valuable beachfront spectrum necessary to help meet our nation's skyrocketing spectrum demands. The Commission therefore must make the most of this opportunity by maximizing the amount of spectrum made available for wireless broadband services through the reverse auction and repacking process. Equally important, however, is that the Commission establish a forward auction framework and 600 MHz band plan that sufficiently promote consumer welfare by ensuring that small and regional carriers, as well as new entrants, have fair opportunities to deploy advanced networks that take full advantage of the excellent propagation characteristics of the 600 MHz spectrum.

Respectfully submitted,

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January 25, 2013